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The Environmental Assessment and Management (TEAM) Guide: North Carolina Supplement

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Abstract: Environmental assessments help determine compliance with current environmental regulations. The U.S. Air Force, U.S. Army, Defense Logistics Agency (DLA), and Corps of Engineers (Civil Works) have adopted environmental compliance programs that identify compliance problems before they are cited as violations by the U.S. Environmental Protection Agency.

Since 1984, the U.S. Army Construction Engineering Research Laboratory, in cooperation with numerous Department of Defense (DOD) components, has developed environmental compliance assessment checklist manuals. The Environmental Assessment and Management (TEAM) Guide was developed for use by all DOD components. Currently there are five participating DOD components: the Air Force, Air National Guard, Army, Civil Works, and DLA. These agencies have agreed to share the development and maintenance of this Guide.

The Guide combines Code of Federal Regulations and management practices into a series of checklists that show legal requirements and the specific operations or items to review. TEAM Guide is supplemented by DOD component-specific manuals detailing DOD component regulations and policies. The North Carolina Supplement was developed to be used in conjunction with the TEAM Guide, using existing North Carolina state environmental legislation and regulations as well as suggested management practices.

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FOREWORD

This is Special Report ERDC/CERL SR-06-12. The report is based on the information available on Enflex Federal and State Regulations as of March 2010.

The research was performed for AEC MIPR 0010005589, technical monitor Mark DItmore; ANG MIPR F9WFEV0028G001, technical monitor is Chuck Smith; AGB W45XMA00130245, technical monitor is Phil Dao; Army Reserve MIPR10CODCD201, technical monitor is Roc Tschirhart; Commerce MIPR 1301-09-SA00110, technical monitor is Greg Falzetta; USACE Fund account 96x3123, technical monitor is John Coho; DHS IAG HSHQDC-08-X-00456, technical monitor is Peter Wixted; DLA MIPR SP1001090, technical monitor is Pam Hillis; USPS MOA-05-CERL-01, technical monitor is Sharon Marsh; and, State Department IAG F3NF369350G002, technical monitor is Janice Smith.

The research was performed by the Business Processes Branch (CN-B), Installations Division (CN), of the U.S. Army Construction Engineering Research Laboratory (CERL). The CERL Principal Investigator is Carolyn O'Rourke. The CERL Researcher is Patricia Kemme. Ms. Michelle Hanson is Branch Chief, CN-B, and Mr. John Bandy is Division Chief, CN. Dr. Ilker Adiguzel is Director of CERL.

CERL is an element of the U.S. Army Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers. The Director of ERDC is Dr. James R. Houston, and the Commander is COL Gary Johnson.

NOTICE

This manual is intended as general guidance for personnel at Federal facilities. It is not, nor is it intended to be, a complete treatise on environmental laws and regulations. Neither the U.S. Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information contained herein. For any specific questions about, or interpretations of, the legal references herein, consult appropriate legal counsel.

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SECTION 1

AIR EMISSIONS MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Air Emissions Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Regulations Incorporated by Reference

See Appendix 1-1 for Federal Regulations incorporated by reference.

Definitions

- *Abrasive* - any material used in abrasive blasting operations (15A NCAC 2D.0541) [Added March 2001].
- *Abrasive Blasting* - the operation of cleaning or preparing a surface by forcibly propelling a stream of abrasive material against the surface. Sandblasting is one form of abrasive blasting (15A NCAC 2D.0541) [Added March 2001].
- *Abrasive Blasting Equipment* - any equipment used in abrasive blasting operations (15A NCAC 2D.0541) [Added March 2001].
- *Acid Rain Program* - the Federal program for the reduction of acid rain including 40 CFR Parts 72, 75, 76, and 77 (15A NCAC 2D.1401).
- *Actual Emissions* - the actual rate of emissions in tons per year of any air pollutant emitted from the facility over the preceding calendar year. Actual emissions shall be calculated using the sources' actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted during the preceding calendar year. Actual emissions include fugitive emissions as specified in the definition of major source in 40 CFR 70.2. For fee applicability and calculation purposes under Rule .0201 or .0203 of this Section and emissions reporting purposes under Rule .0207 of this Section, actual emissions do not include emissions beyond the normal emissions during violations, malfunctions, start-ups, and shut-downs, do not include a facility's secondary emissions such as those from motor vehicles associated with the facility, and do not include emissions from insignificant activities listed in Rule .0102(b)(1) of this Subchapter (see Appendix 1-4) (15A NCAC 2Q.0202) [Added March 2003; Revised March 2007].
- *Air Curtain Burner* - a stationary or portable combustion device that directs a plane of high velocity forced draft air through a manifold head into a pit or container with vertical walls in such a manner as to maintain a curtain of air over the surface of the pit and a recirculating motion of air under the curtain. (15A NCAC 2D.1902) [Added March 2005].
- *Air Pollutant* - an air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive substance or matter emitted into or otherwise entering the ambient air (15A NCAC 2D.0101).
- *Air Quality Action Day Code 'Orange' or Above* - an air quality index greater than 100 as defined in 40 CFR Part 58, Appendix G (15A NCAC 2D.1902) [Added March 2006].
- *Air Quality Forecast Area* - (15A NCAC 2D.1902) [Added March 2006]:

1. Asheville air quality forecast area: Buncombe, Haywood, Henderson, Jackson, Madison, Swain, Transylvania, and Yancey Counties;
 2. Charlotte air quality forecast area: Cabarrus, Gaston, Iredell South of Interstate 40, Lincoln, Mecklenburg, Rowan, and Union Counties;
 3. Hickory air quality forecast area: Alexander, Burke, Caldwell, and Catawba Counties;
 4. Fayetteville air quality forecast area: Cumberland and Harnett Counties;
 5. Rocky Mount air quality forecast area: Edgecombe and Nash Counties;
 6. Triad air quality forecast area: Alamance, Caswell, Davidson, Davie, Forsyth, Guilford, Randolph, Rockingham, and Stokes Counties; and
 7. Triangle air quality forecast area: Chatham, Durham, Franklin, Granville, Johnston, Person, Orange, Vance, and Wake Counties.
- *Allowable Emissions* - the maximum emissions allowed by the applicable rules contained in 15A NCAC 2D or by permit conditions if the permit limits emissions to a lesser amount (15A NCAC 2Q.0103).
 - *Ambient Air* - that portion of the atmosphere outside buildings or other enclosed structures, stacks, or ducts, and that surrounds human, animal, or plant life, or property (15A NCAC 2D.0101).
 - *Animal Operation* - any agricultural farming activity involving 250 or more swine, 100 or more confined cattle, 75 or more horses, 1,000 or more sheep, or 30,000 or more confined poultry with a liquid animal waste management system. Public livestock markets or sales regulated under Articles 35 and 35A of Chapter 106 of the General Statutes shall not be considered animal operations for purposes of this Part (North Carolina General Statutes (NCGS) 143-215.10B) [Added February 2000].
 - *Applicable Requirements* – (15A NCAC 2Q.0103) [Added March 2006]:
 1. any requirement of Section .0500 of this Subchapter;
 2. any standard or other requirement provided for in the implementation plan approved or promulgated by EPA through rulemaking under Title I of the federal Clean Air Act that implements the relevant requirements of the federal Clean Air Act including any revisions to 40 CFR Part 52;
 3. any term or condition of a construction permit for a facility covered under 15A NCAC 2D .0530, .0531, or .0532;
 4. any standard or other requirement under Section 111 or 112 of the federal Clean Air Act, but not including the contents of any risk management plan required under Section 112 of the federal Clean Air Act;
 5. any standard or other requirement under Title IV;
 6. any standard or other requirement governing solid waste incineration under Section 129 of the federal Clean Air Act;
 7. any standard or other requirement under Section 183(e), 183(f), or 328 of the federal Clean Air Act;
 8. any standard or requirement under Title VI of the federal Clean Air Act unless a permit for such requirement is not required under this Section;
 9. any requirement under Section 504(b) or 114(a)(3) of the federal Clean Air Act; or
 10. any national ambient air quality standard or increment or visibility requirement under Part C of Title I of the federal Clean Air Act, but only as it would apply to temporary sources permitted pursuant to 504(e) of the federal Clean Air Act.
 - *Asphalt* - a dark-brown to black cementitious material (solid, semisolid, or liquid in consistency) in which the predominating constituents are bitumens which occur in nature as such or which are obtained as residue in refining petroleum (15A NCAC 2D.0931).
 - *Auxiliary Power Unit* - a mechanical or electrical device affixed to a vehicle that is designed to be used to generate an alternative source of power for any of the vehicle's systems other than the primary propulsion engine (15A NCAC 2D.1010 (a)) [Added March 2010].
 - *Averaging Set of Sources* - all the stationary sources included in an emissions averaging plan in accordance to 15A NCAC 2D.1410 (15A NCAC 2D.1401).

- *Averaging Source* - a stationary source that is included in an emissions averaging plan in accordance to 15A NCAC 2D.1410 except during start-up and shut-down (15A NCAC 2D.1401).
- *Building* - a structure with four or more sided and a roof that is used, in whole or in part, to house or contain abrasive blasting (15A NCAC 2D.0541) [Added March 2001].
- *Capacity Factor* - the ratio of the average load on a machine or equipment for the period of time considered to the capacity rating of the machine or equipment (15A NCAC 2D.0602).
- *Capture System*- the equipment (including hoods, ducts, fans, etc.) used to contain, capture, or transport a pollutant to a control device (15A NCAC 2D.0101) [Added March 2005].
- *Cartridge Filter* - perforated canisters containing filtration paper and/or activated carbon that are used in a pressurized system to remove solid particles and fugitive dyes from soil-laden solvent, together with the piping and ductwork used in the installation of this device (15A NCAC 2D.0945).
- *Class I Municipal Waste Combustor* - a small municipal waste combustor located at a municipal waste combustion plant with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste (15A NCAC 2D.1210(d) and 15A NCAC 2D.1202) [Added March 2003].
- *Coating* - a functional, protective, or decorative film applied in a thin layer to a surface (15A NCAC 2D.0901).
- *Coating Applicator* - an apparatus used to apply a surface coating (15A NCAC 2D.0901).
- *Coating Line* - one or more apparatus or operations in a single line wherein a surface coating is applied, dried, or cured and which include a coating applicator and flashoff area and may include an oven or associated control devices (15A NCAC 2D.0901).
- *Coating Operation* - a process in which paints, enamels, lacquers, varnishes, inks, dyes, glues, and other similar materials are applied to wood, paper, metal, plastic, textiles, or other types of substrates (15A NCAC 2Q.0803) [Added March 2001].
- *Co-fired Combustor (as defined in 40 CFR Part 60, Subpart Ec)* - a unit combusting hospital, medical, or infectious waste with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceable requirements limiting the unit to combusting a fuel feed stream, 10 percent or less of the weight of which is comprised, in aggregate, of hospital, medical, or infectious waste as measured on a calendar quarter basis. For the purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered "other" waste when calculating the percentage of hospital, medical, or infectious waste combusted (15A NCAC 2D.1202) [Added March 2001].
- *Cold Cleaning* - the batch process of cleaning and removing soils from metal surfaces by spraying, brushing, flushing, or immersion while maintaining the solvent below its boiling point. Wipe cleaning is not included in this definition (15A NCAC 2D.0930).
- *Combustible Material* - any substance which, when ignited, will burn in air (15A NCAC 2D.0101).
- *Combustion Turbine* - an enclosed fossil or other fuel-fired device that is comprised of a compressor, a combustor, and a turbine, and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine (15A NCAC 2D.1401) [Added March 2003].
- *Commercial and Industrial Solid Waste Incinerator (CISWI) or Commercial and Industrial Solid Waste Incineration Unit* - any combustion device, except air pollution control devices, that combusts commercial and industrial waste (15A NCAC 2D.1210(d)) [Added March 2003].

- *Commercial and Industrial Waste* - solid waste combusted in an enclosed device using controlled flame combustion without energy recovery that is a distinct operating unit of any commercial or industrial facility (including field-erected, modular, and custom built incineration units operating with starved or excess air) (15A NCAC 2D.1210(d)) [Added March 2003].
- *Congestion* - a situation that occurs when the volume of traffic exceeds the capacity of a roadway (15A NCAC 2D.1010 (a)) [Added March 2010].
- *Construction* - change in method of operation or any physical change, including onsite fabrication, erection, installation, replacement, demolition, or modification of a source, that results in a change in emissions or affects the compliance status (15A NCAC 2D.0101).
- *Construction* –
 1. with respect to animal operations, means any physical change (including fabrication, erection, installation, replacement, demolition, excavation, or other modification) at any contiguous area under common control (15A NCAC 2D.1801) [Added February 2000].
 2. change in the method of operation or any physical change (including on-site fabrication, erection, installation, replacement, demolition, or modification of a source) that results in a change in emissions or affects the compliance status. The following activities are not construction (15A NCAC 2Q.0103) [Added March 2006]:
 - a. clearing and grading
 - b. building access roads, driveways, and parking lots, except parking lots required to have a construction permit under 15A NCAC 02Q .0600
 - c. building and installing underground pipe work, including water, sewer, electric, and telecommunications utilities
 - d. building ancillary structures, including fences and office buildings that are not a necessary component of an air contaminant source, equipment, or associated air cleaning device for which a permit is required under G.S. 143-215.108.
- *Construction And Demolition Waste* - wood, paper, and other combustible waste except for hazardous waste and asphaltic material, resulting from construction and demolition projects (15A NCAC 2D.1202) [Added March 2001; Revised March 2003].
- *Containers and Conveyors of Solvent* - piping, ductwork, pumps, storage tanks, and other ancillary equipment that are associated with the installation and operation of washers, dryers, filters, stills, and settling tanks (15A NCAC 2D.0945).
- *Continuous Vapor Control System* - a vapor control system which treats vapors displaced from tanks during filling on a demand basis without intermediate accumulation (15A NCAC 2D.0901).
- *Control Device* - equipment (fume incinerator, adsorber, absorber, scrubber, filter media, cyclone, electrostatic precipitator, or the like) used to destroy or remove air pollutant(s) before discharge to the ambient air (15A NCAC 2D.0101) [Added March 2005].
- *Control Technology* - economically feasible control devices installed to effectively reduce objectionable odors from animal operations (15A NCAC 2D.1801) [Added March 2001].
- *Conveyorized Degreasing* - the continuous process of cleaning and removing soils from metal surfaces by operating with either cold or vaporized solvents (15A NCAC 2D.0930).
- *Crematory Incinerator* - any incinerator located at a crematory regulated under 21 NCAC 34C that is used solely for the cremation of human remains (15A NCAC 2D.1202) [Added March 2001].

- *Cutback Asphalt* - asphalt cement which has been liquefied by blending with petroleum solvents (diluent). Upon exposure to atmospheric conditions, the diluents evaporate, leaving the asphalt cement to perform its function (15A NCAC 2D.0931).
- *Dangerous Materials* - explosives or containers used in the holding or transporting of explosives (15A NCAC 2D.1902) [Added March 2007].
- *Dioxin and Furan* - tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans (15A NCAC 2D.1202) [Added March 2001].
- *Director* - the Director of the Division of Air Quality unless otherwise specified (15A NCAC 2D.0101).
- *Dispersion Technique* - any technique that attempts to affect the concentration of a pollutant in the ambient air by either (15A NCAC 2D.0533):
 1. using that portion of a stack which exceeds good engineering practice stack height
 2. varying the rate of emission of a pollutant according to atmospheric conditions or ambient concentrations of that pollutant
 3. increasing final exhaust gas plume rise by manipulating source process parameters, exhaust gas parameters, stack parameters, or combining exhaust gases from several existing stacks into one stack; or other selective handling of exhaust gas streams so as to increase the exhaust gas plume rise.

Dispersion technique does not include the following:

 1. reheating of a gas stream, following use of a pollution control system, for the purpose of returning the gas to the temperature at which it was originally discharged from the facility generating the gas stream
 2. the using of smoke management in agricultural or silvicultural prescribed burning programs
 3. the merging of exhaust gas streams where either:
 - a. the facility owner or operator demonstrates that the source was originally designed and constructed with such merged gas streams
 - b. after 8 July 1985, such merging is part of a change in operation at the facility that includes installation of pollution controls and is accompanied by a net reduction in allowable emissions of a pollutant. This exclusion from the definition of dispersion techniques applies only to the emission limitation for the pollutant affected by such change in operation
 - c. episodic restrictions on residential wood burning and open burning
 - d. techniques which increase final exhaust gas plume rise where the resulting allowable emissions of SO₂ from the facility do not exceed 5000 ton/yr.
- *Distillate Oils* - those liquid fractions of petroleum which are normally derived by vaporization and condensation of petroleum remaining after gasoline and fractions more volatile than gasoline have been removed (15A NCAC 2D.0602).
- *Division* - the Division of Air Quality (15A NCAC 2Q.0103).
- *Dioxin and Furan* - tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans (15A NCAC 2D.1210 (d)) [Added March 2003].
- *Dry Cleaning* - a process for the cleaning of textiles and fabric products in which articles are washed in a non-aqueous solution (solvent) and then dried by exposure to a heated air stream (15A NCAC 2D.0945).
- *Dryer* - a machine used to remove petroleum solvent from articles of clothing or other textile or leather goods, after washing and removing of excess petroleum solvent, together with the piping and ductwork used in the installation of this device (15A NCAC 2D.0945).
- *Emergency* - a situation that poses an immediate risk to health, life, property, or environment (15A NCAC 2D.1010 (a)) [Added March 2010].

- *Emergency Generator* - a stationary internal combustion engine used to generate electricity only during the loss of primary power at the facility that is beyond the control of the owner or operator of the facility or during maintenance when necessary to protect the environment. An emergency generator may be operated periodically to ensure that it will operate (15A NCAC 2Q.0807) [Added March 2001].
- *Emergency Generator* - a stationary internal combustion engine used to generate electricity only during the loss of primary power at the facility that is beyond the control of the owner or operator of the facility maintenance or when maintenance is being performed on the power supply to equipment that is essential in protecting the environment or to such equipment itself. An emergency generator may be operated periodically to ensure that it will operate (15A NCAC 2D.1401) [Revised March 2003].
- *Emergency Use Internal Combustion Engines* - stationary internal combustion engines used to drive pumps, aerators, and other equipment only during the loss of primary power at the facility that is beyond the control of the owner or operator of the facility or during maintenance when necessary to protect the environment. An emergency use internal combustion engine may be operated periodically to ensure that it will operate (15A NCAC 2Q.0807) [Added March 2001].
- *Emergency Use Internal Combustion Engines* - stationary internal combustion engines used to drive pumps, aerators, and other equipment only during: (15A NCAC 2D.1401) [Revised March 2003]
 1. the loss of primary power at the facility that is beyond the control of the owner or operator of the facility; or
 2. maintenance when maintenance is being performed on the power supply to equipment that is essential in protecting the environment or to such equipment itself. An emergency use internal combustion engine may be operated periodically to ensure that it will operate
- *Emergency Vehicle* - any vehicle that responds to or supports an emergency. These vehicles are operated by part of the government, charities, non-governmental organizations, and commercial companies (15A NCAC 2D.1010 (a)) [Added March 2010].
- *Emission* - the release or discharge, whether directly or indirectly, of any air pollutant into the ambient air from any source (15A NCAC 2D.0101).
- *Emission Limitation* - a requirement established by 15A NCAC 2D or a local air quality program certified by the Commission that limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirements that limit the level of opacity, prescribe equipment, set fuel specifications, or prescribe operation or maintenance procedures for a source to assure continuous emission reduction (15A NCAC 2D.0533).
- *Emission Standard* - a regulation (or portion thereof) setting forth an allowable rate of emissions, level of opacity, or prescribing equipment or fuel specifications that result in control of air pollution emissions (15A NCAC 2D.0602).
- *Emulsified Asphalt* - an emulsion of asphalt cement and water which contains a small amount of an emulsifying agent; a heterogeneous system containing two normally immiscible phases (asphalt and water) in which the water forms the continuous phase of the emulsion, and minute globules of asphalt form the discontinuous phase (15A NCAC 2D.0931).
- *Equivalent Unadulterated Fuels* - used oils that have been refined such that the content of toxic additives or contaminants in the oil are no greater than those in unadulterated fossil fuels (15A NCAC 2Q.0103).
- *Excess Emissions* –
 1. emissions of an air pollutant in excess of an emission standard (15A NCAC 2D.0602).
 2. an emission rate that exceeds the applicable limitation or standard; for the purposes of this definition, nitrogen oxides emitted by a source covered under Rules .1416, .1417, or .1418 of this Section during the

ozone season above its allocation, as may be adjusted under Rule .1419 of this Section, are not considered excess emissions (15A NCAC 2D.1401) [Added March 2002].

- *Excessive Concentrations* - for the purpose of determining good engineering practice stack height under 3. of the good engineering practice (GEP) definition (15A NCAC 2D.0533):
 1. for sources seeking credit for stack height exceeding that established under 2. and 3. of the GEP definition, a maximum ground-level concentration due to emissions from a stack due in whole or part to downwash, wakes, and eddy effects produced by nearby structures or nearby terrain features which individually is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and which contributes to a total concentration due to emissions from all sources that is greater than an ambient air quality standard. For sources subject to requirements regarding emissions affecting Class I areas, an excessive concentration alternatively means a maximum ground-level concentration due to emissions from a stack due in whole or part to downwash, wakes, or eddy effects produced by nearby structures or nearby terrain features which individually is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and greater than a prevention of significant deterioration increment. The allowable emission rate to be used in making demonstrations is prescribed by the new source performance standard that is applicable to the source category unless the owner or operator demonstrates that this emission rate is infeasible.

Where such demonstrations are approved by the Director, an alternative emission rate is established in consultation with the source owner or operator
 2. for sources seeking credit for increases in existing stack heights up to the heights established under either subparagraph 2. or subparagraph 3. of the definition of *Good Engineering Practice (GEP) Stack Height* (see below) either
 - a. 2 actual presence of a local nuisance (odor, visibility impairment, or pollutant concentration) caused by the existing stack, as determined by the Director.
- *Farm Vehicle* - a vehicle used exclusively for farm use and operated within 150 miles of the farmer's farm by the farmer or the farmer's employee to transport either agricultural product, farm machinery, or farm supplies. It is not used in the operations of a for-hire motor carrier (15A NCAC 2D.1010 (a)) [Added March 2010].
- *Federally Enforceable* or *Federal-Enforceable* - enforceable by USEPA (15A NCAC 2Q.0103).
- *Flashoff Area* - the space between the application area and the oven (15A NCAC 2D.0901).
- *Flexographic Printing* - the application of words, designs, and pictures to a substrate by means of a roll printing technique in which both the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials (15A NCAC 2D.0936) [Citation Revised March 2007].
- *Fossil Fuel-Fired* - (15A NCAC 2D.1401) [Added March 2001; Revised March 2002]:
 - a. For sources that began operation before January 1, 1996, where fossil fuel, actually combusted either alone or in combination any other fuel, comprises more than 50 percent of the annual heat input on a Btu basis during 1995, or, if a source had no heat input in 1995, during the last yr of operation of the unit before 1995:
 - b. For sources that began operation on or after January 1, 1996 and before January 1, 1997, where fossil fuel, actually combusted either alone or in combination with any other fuel, comprises more than 50 percent of the annual heat input on a Btu basis during 1996; or
 - c. For units that began operation on or after January 1, 1997:
 1. where fossil fuel, combusted either alone or in combination with any other fuel, comprises more than 50 percent of the annual heat input on a Btu basis during any year; or
 2. where fossil fuel, combusted either alone or in combination with any other fuel, is projected to comprise more than 50 percent of the annual heat input on a Btu basis during any year, provided that the until shall be "fossil fuel-fired" as of the date, during such year, on which the source begins combusting fossil fuel

- *Fossil Fuel-Fired Steam Generator* - a furnace or boiler used in the process of burning fossil fuel for the primary purpose of producing steam by heat transfer (15A NCAC 2D.0602).
- *Freeboard Height* - for vapor degreasers the distance from the top of the vapor zone to the top of the degreaser tank. For cold cleaners, freeboard height means the distance from liquid solvent level in the degreaser tank to the top of the tank (15A NCAC 2D.0930).
- *Freeboard Ratio* - the freeboard height divided by the width of the degreaser (15A NCAC 2D.0930).
- *Fugitive Dust Emissions* - emissions of particulate matter into the outdoor atmosphere that is not vented or captured by a stack or chimney (15A NCAC 2D.0541) [Added March 2001].
- *Fuel Combustion Equipment* - any fuel burning source covered under 15A NCAC 2D.0503, .0504, or .0536, or 40 CFR Part 60 Subpart D, Da, Db, or Dc (15A NCAC 2Q.0103) [Revised February 1999].
- *Fugitive Emission* - those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening (15A NCAC 2D.0101).
- *Fuel Burning Equipment* - equipment whose primary purpose is the production of energy or power from the combustion of any fuel. The equipment is generally used for, but not limited to, heating water, generating or circulating steam, heating air as in warm air furnace, or furnishing process heat by transferring energy by fluids or through process vessel walls (15A NCAC 2D.0101).
- *General Facility* - a facility obtaining a permit under Rule .0310 or .0509 of this Subchapter (15A NCAC 2Q.0202) [Added March 2003; Citation Revised March 2007].
- *Good Engineering Practice (GEP) Stack Height* - the greater of one of the following (15A NCAC 2D.0533):
 1. 65 m measured from the ground-level elevation at the base of the stack
 2. 2.5 times the height of nearby structure(s) measured from the ground-level elevation at the base of the stack for stacks in existence on 12 January 1979 and for which the owner or operator had obtained all applicable permit or approvals required under 15A NCAC 2Q and 40 CFR Parts 51 and 52, provided the owner or operator produces evidence that this equation was actually relied on in establishing an emission limitation
 3. for stacks not covered under 2., the height of nearby structure(s) measured from the ground-level elevation at the base of the stack plus 1.5 times the lesser dimension (height or projected width) of nearby structure(s) provided the Director may require the use of a field study or fluid model to verify GEP stack height for the source
 4. the height demonstrated by a fluid model or a field study approved by the Director, which ensures that the emissions from a stack do not result in excessive concentrations of any air pollutant as a result of atmospheric downwash, wakes, or eddy effects created by the source itself, nearby structures or nearby terrain features.
- *Graphic Arts Operation* - the application of inks to form words, designs, or pictures to a substrate, usually by a series of application rolls each with only partial coverage and usually using letterpress, offset lithography, rotogravure, or flexographic process (15A NCAC 2Q.0803) [Added March 2001].
- *Green Wood* - wood with a moisture content of 18% or more (15A NCAC 2Q.0103) [Added March 2007].
- *Gross Vehicle Weight Rating* - the weight specified by the manufacturer as the loaded weight of a single vehicle (15A NCAC 2D.1010 (a)) [Added March 2010].
- *Hazardous Air Pollutant* - any pollutant which has been listed pursuant to Section 112(b) of the Federal *Clean Air Act*. Pollutants which are listed only in 15A NCAC 2D.1104 (see Appendix 1-16), but not pursuant to Section 112(b), are not included in this definition (15A NCAC 2Q.0103).

- *Hazardous Waste Incinerator* - an incinerator regulated under 15A NCAC 13A.0101 through .0119, 40 CFR 264.340 to 264.351, Subpart O, or 265.340 to 265.352, Subpart O (15A NCAC 2D.1202) [Added March 2001].
- *Hazardous Waste Incinerator* - an incinerator regulated under 15A NCAC 13A.0001 through .0014, 40 CFR 264.340 to 264.351, Subpart O, or 265.340 to 265.352, Subpart O (15A NCAC 2D.1202).
- *Heavy-Duty Vehicle* - a motor vehicle which is designed primarily for one of the following (15A NCAC 2D.1003):
 1. transportation of property and has a GVWR (Gross Vehicle Weight Rating) of more than 8500 lb
 2. transportation of persons and has a capacity of more than 12 persons
 3. use as a recreational motor vehicle, which is designed primarily to provide temporary or permanent living quarters for travel, camping, or other recreational use and has a GVWR of more than 8500 lb.
- *Heavy-duty Vehicle* - a motor vehicle (excluding trailer(s)) with a gross vehicle weight rating of 10,001 pounds or greater for the purpose of this Rule (15A NCAC 2D.1010 (a)) [Added March 2010].
- *High Solids Coating* - a coating which contains a higher percentage of solids and a lower percentage of volatile organic compounds and water thereby potentially lowering volatile organic compound emissions; usually paints with greater than 60 percent solids by volume are considered high solids coatings although the term is often applied to any coating that meets the USEPA Control Technology Guidelines (15A NCAC 2D.0901).
- *Hospital, Medical And Infectious Waste Incinerator (HMIWI)* - any device that combusts any amount of hospital, medical and infectious waste (15A NCAC 2D.1202) [Citation Revised March 2007].
- *Hospital Waste* - discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation (15A NCAC 2D.1202) [Added March 2001].
- *Hydrocarbon* - any organic compound of carbon and hydrogen only (15A NCAC 2D.0901).
- *Idling* - the operation of a motor vehicle's propulsion engine while the vehicle is stationary (15A NCAC 2D.1010 (a)) [Added March 2010].
- *Incinerator* - a combustion apparatus designed for high temperature operation in which solid, semisolid, liquid, or gaseous combustible wastes are ignited and burned efficiently and from which the solid and gaseous residues contain little or no combustible material (15A NCAC 2D.0901).
- *Indirect-Fired Process Heater* - an enclosed device using controlled flame where the device's primary purpose is to transfer heat by indirect heat exchange to a process fluid, a process material that is not a fluid, or a heat transfer material, instead of steam, for use in a process (15A NCAC 2D.1401) [Added March 2002].
- *Initiated* - start or ignite a fire or reignite or rekindle a fire (15A NCAC 2D.1902) [Added March 2005].
- *Land Clearing* - the uprooting or clearing of vegetation in connection with construction for buildings; right-of-way maintenance; agricultural, residential, commercial, institutional, or industrial development; mining activities; or the initial clearing of vegetation to enhance property value; but does not include routine maintenance or property clean-up activities (15A NCAC 2D.1902) [Added March 2005].
- *Large HMIWI* - : (15A NCAC 2D.1202) [Added March 2001; Revised March 2003]:
 1. a HMIWI whose maximum design waste burning capacity is more than 500 pounds per hour
 2. a continuous or intermittent HMIWI whose maximum charge rate is more than 500 pounds per hour
 3. a batch HMIWI whose maximum charge rate is more than 4,000 pounds per day.

- *Large Municipal Waste Combustor* - each municipal waste combustor unit with a combustion capacity greater than 250 tons per day of municipal solid waste (15A NCAC 2D.1202) [Added March 200; Revised March 2003].
- *Light-Duty Vehicle* - a motor vehicle which is designed primarily for either (15A NCAC 2D.1003):
 1. transportation of property and has a GVWR of 8500 lb or less
 2. transportation of persons and has a capacity of 12 persons or less.
- *MACT* - any maximum achievable control technology emission standard applied to a source or facility pursuant to Section 112 of the federal Clean Air Act (15A NCAC 2D.1103) [Revised March 2007].
- *Medical And Infectious Waste* - any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed in Sub-items (a)(i) through (vii) of this Item. (15A NCAC 2D.1202) [Added March 2001].
 1. The definition of medical and infectious waste includes:
 - a. cultures and stocks of infectious agents and associated biologicals, including:
 - i. cultures from medical and pathological laboratories;
 - ii. cultures and stocks of infectious agents from research and industrial laboratories;
 - iii. wastes from the production of biologicals;
 - iv. discarded live and attenuated vaccines; and
 - v. culture dishes and devices used to transfer, inoculate, and mix cultures;
 - b. human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers;
 - c. human blood and blood products including:
 - i. liquid waste human blood;
 - ii. products of blood;
 - iii. items saturated or dripping with human blood; or
 - iv. items that were saturated or dripping with human blood that are now caked with dried human blood including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category;
 - d. sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips;
 - e. animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals;
 - f. isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases; and
 - g. unused sharps including the following unused or discarded sharps:
 - i. hypodermic needles;
 - ii. suture needles;
 - iii. syringes; and
 - iv. scalpel blades.
 2. The definition of medical and infectious waste does not include:
 - a. hazardous waste identified or listed under 40 CFR Part 261;
 - b. household waste, as defined in 40 CFR Part 261.4(b)(1);
 - c. ash from incineration of medical and infectious waste, once the incineration process has been completed;
 - d. human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in 40 CFR 261.4(a)(1).

- *Medical Devices* - instruments, apparatus, implements, machines, implants, in vitro reagents, contrivances, or other similar or related articles including their components, parts, and accessories, intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; or intended to affect the structure or any function of the body of man or other animals (15A NCAC 2D.0538(a)).
- *Medical Waste Incinerator* - any incinerator regulated under Section 15A NCAC 13B.1207(3) (15A NCAC 2D.1202).
- *Medium HMIWI* -: (15A NCAC 2D.1202) [Added March 2001, Revised March 2003]:
 1. a HMIWI whose maximum design waste burning capacity is more than 200 pounds per hour but less than or equal to 500 pounds per hour;
 2. a continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or
 3. a batch HMIWI whose maximum charge rate is more than 1,600 pounds per day but less than or equal to 4,000 pounds per day.
- *Military Vehicle* - a motor vehicle owned by the U.S. Department of Defense (15A NCAC 2D.1010 (a)) [Added March 2010].
- *Modified Animal Operation* - an animal operation that commences construction after February 28, 1999, to increase the steady state live weight that can be housed at that animal operation. Modified animal operation does not include renovating existing barns, relocating barns, or replacing existing lagoons or barns if the new barn or lagoon is no closer to the nearest property and if the new barn or lagoon does not increase the steady state live weight than can be housed at that animal operation (15A NCAC 2D.1801) [Added February 2000; Revised March 2001].
- *Motor Vehicle* - any self-propelled vehicle used for transporting property or persons (15A NCAC 2D.1010 and 15A NCAC 2D.1003) [Citation Revised March 2010].
- *Motorcycle* - any motor vehicle having a seat or saddle for the use of the rider and designed to travel on not more than three wheels in contact with the ground (15A NCAC 2D.1003).
- *Municipal Solid Waste Incinerator* - an incinerator as defined at 40 CFR 60.51a that burns municipal- type solid waste of which at least 95 percent by weight is generated offsite and that has a capacity of at least 1 ton/h, except that boilers are not considered part of this definition (15A NCAC 2D.1202).
- *Municipal-Type Solid Waste (MSW) Or Municipal Solid Waste* - municipal-type solid waste defined in 40 CFR 60.51b (15A NCAC 2D.1202) [Added March 2001].
- *Municipal-Type Solid Waste* - solid waste defined at 40 CFR 60.51a (15A NCAC 2D.1202).
- *Municipal Waste Combustor (MWC) Or Municipal Waste Combustor Unit* - a municipal waste combustor as defined in 40 CFR 60.51b (15A NCAC 2D.1202) [Added March 2001].
- *Municipal Waste Combustor Plant* - one or more designated units at the same location (15A NCAC 2D.1202) [Added March 2001].
- *Municipal Waste Combustor Unit Capacity* - the maximum charging rate of a municipal waste combustor unit expressed in tons per day of municipal solid waste combusted, calculated according to the procedures under 40 CFR 60.58b(j). Section 60.58b (j) includes procedures for determining municipal waste combustor unit capacity for continuous and batch feed municipal waste combustors (15A NCAC 2D.1202) [Added March 2001].
- *Nearby* - for a specific structure or terrain feature (15A NCAC 2D.0533) [Citation Added February 1999]:

1. under subparagraphs 2. and 3. of the *Good Engineering Practice (GEP) Stack Height* definition (see above), that distance up to five times the lesser of the height or the width dimension of a structure but not greater than 1/2 mi. The height of the structure is measured from the ground-level elevation at the base of the stack
 2. under 4. of the *Good Engineering Practice (GEP) Stack Height* definition, not greater than 1/2 mi, except that the portion of a terrain feature may be considered to be nearby, which falls within a distance of up to 10 times the maximum height of the feature, not to exceed 2 mi if such feature achieves a height 1/2 mi from the stack that is at least 40 percent of the GEP stack height determined by 3. of the GEP definition or 26 m, whichever is greater, as measured from the ground-level elevation at the base of the stack. The height of the structure or terrain feature is measured from the ground-level elevation at the base of the stack.
- *Net Increase in Emissions* - for a modification the sum of any increases in permitted allowable and decreases in the actual rates of emissions from the proposed modification from the sources at the facility for which the air permit application is being filed. If the net increase in emissions from the proposed modification is greater than zero, all other increases in permitted allowable and decreases in the actual rates of emissions at the facility within five years immediately preceding the filing of the air permit application for the proposed modification that are otherwise creditable emissions may be included (15A NCAC 2Q.0703) [Revised March 2007].
 - *New Animal Operation* - means an animal operation that commences construction after February 28, 1999 (15A NCAC 2D.1801) [Added February 2000].
 - *Nitric Acid Plant* - any facility producing nitric acid 30 to 70 percent in strength by either the pressure or atmospheric pressure process (15A NCAC 2D.0602).
 - *NO_x* - nitrogen oxides (15A NCAC 2D.1401).
 - *Nuisance* - causing physical irritation exacerbating a documented medical condition, visibility impairment, or evidence of soot or ash on property or structure other than the property on which the burning is done (15A NCAC 2D.1902) [Added March 2006].
 - *Objectionable Odor* - any odor present in the ambient air that by itself, or in combination with other odors, is or may be harmful or injurious to human health or welfare, or may unreasonably interfere with the comfortable use and enjoyment of life or property. Odors are harmful or injurious to human health if they tend to lessen human food and water intake, interfere with sleep, upset appetite, produce irritation of the upper respiratory tract, or cause symptoms of nausea, or if their chemical or physical nature is, or may be, detrimental or dangerous to human health (15A NCAC 2D.1801) [Added March 2001].
 - *Occupied Residence* - occupied residence as defined in G.S. 106-802 (15A NCAC 2D.1801) [Added March 2001].
 - *Occupied Structure* - a building in which people may live or work or one intended for housing farm or other domestic animals (15A NCAC 2D.1902) [Added March 2005].
 - *On-road Vehicle* - a self-propelled vehicle that is designed for use on a highway (15A NCAC 2D.1010 (a)) [Added March 2010].
 - *Opacity* - that property of a substance tending to obscure vision and is measured as percent obscuration (15A NCAC 2D.0101).
 - *Open Burning* - any fire whose products of combustion are emitted directly into the outdoor atmosphere without passing through a stack or chimney, approved incinerator, or other similar device (15A NCAC 2D.0101).
 - *Open Top Vapor Degreasing* - the batch process of cleaning and removing soils from metal surfaces by condensing hot solvent vapor on the colder metal parts (15A NCAC 2D.0930).

- *Organic Material* - a chemical compound of carbon excluding CO, CO₂, carbonic acid, metallic carbides or carbonates, and ammonium carbonate (15A NCAC 2D.0901).
- *Oven* - a chamber within which heat is used to bake, cure, polymerize, or dry a surface coating (15A NCAC 2D.0901).
- *Owner or Operator* – any person who owns, leases, operates, controls, or supervises a facility, source, or air pollution control equipment (15A NCAC 2D.0101) [Added March 2005].
- *Oxygenated Gasoline* - any gasoline that contains a substance or substances to raise the oxygen content of the gasoline to conform with 15A NCAC 2D.1304 (15A NCAC 2D.1303).
- *Ozone Season* - the period beginning May 31 and ending September 30 for 2004 and beginning May 1 and ending September 30 for all other years (15A NCAC 2D.1401) [Added March 2003].
- *Packaging Rotogravure Printing* - printing with a gravure press upon paper, paper board, metal foil, plastic film, and other substrates, which are, in subsequent operation, formed into containers and labels for articles to be sold (15A NCAC 2D.0936) [Citation Revised March 2007].
- *Particulate Matter* - any material except uncombined water that exists in a finely divided form as a liquid or solid at standard conditions (15A NCAC 2D.0101).
- *Particulate Matter Emissions* - all finely divided solid or liquid material, other than uncombined water, emitted to the ambient air as measured by methods specified in 15A NCAC 2D (15A NCAC 2D.0101).
- *Passenger Bus* - any bus, including school buses, which is designed to carry sixteen or more passengers (15A NCAC 2D.1010 (a)) [Added March 2010].
- *Peak Shaving Generator* - a generator that is located at a facility and is used only to serve that facility's on-site electrical load during peak demand periods for the purpose of reducing the cost of electricity; it does not generate electricity for resale. A peak shaving generator may also be used for emergency backup (15A NCAC 2Q.0103) [Added March 2006].
- *Penetrating Prime Coat* - an application of low-viscosity liquid asphalt to an absorbent surface. It is used to prepare an untreated base for an asphalt surface. The prime penetrates the base and plugs the voids, hardens the top, and helps bind it to the overlying asphalt course. It also reduces the necessity of maintaining an untreated base course prior to placing the asphalt pavement (15A NCAC 2D.0931).
- *Perceptible Leaks* - any petroleum solvent vapor or liquid leaks that are conspicuous from visual observation or that bubble after application of a soap solution, such as pools or droplets of liquid, open containers of solvent, or solvent laden waste standing open to the atmosphere (15A NCAC 2D.0945).
- *Permanent Site* - for an air curtain burner, a place where an air curtain burner is operated for more than nine months (15A NCAC 2D.1902) [Added March 2008].
- *Permit* - the legally binding written document, including any revisions thereto, issued pursuant to GS 143-215.108 to the owner or operator of a facility or source that emits one or more air pollutants and that allows that facility or source to operate in compliance with GS 143-215.108. This document specifies the requirements applicable to the facility or source and to the permittee (15A NCAC 2Q.0103).
- *Permittee* - the person who has received an air quality permit from the Division (15A NCAC 2Q.0103).

- *Person* - any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, political subdivision, or any other legal entity, or its legal representative, agent, or assigns (15A NCAC 2D.0101).
- *Petroleum Solvent* - organic material produced by petroleum distillation comprising a hydrocarbon range of 8 to 12 carbon atoms per organic molecule that exists as a liquid under standard conditions (15A NCAC 2D.0945).
- *Petroleum Solvent Dry Cleaning* - a dry cleaning facility that uses petroleum solvent in a combination of washers, dryers, filters, stills, and settling tanks (15A NCAC 2D.0945).
- *PM₁₀* - particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by methods specified in 15A NCAC 2D (15A NCAC 2D.0101).
- *PM₁₀ Emissions* - finely divided solid or liquid material, with an aerodynamic diameter less than or equal to a nominal 10 micrometers emitted to the ambient air as measured by methods specified in 15A NCAC 2D (15A NCAC 2D.0101).
- *Potential Emission* - the quantity of NO_x which would be emitted at the maximum capacity of a stationary source to emit NO_x under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit NO_x is treated as a part of its design if the limitation is Federally enforceable. Such physical or operational limitations include air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed (15A NCAC 2D.1401).
- *POTW* - a publicly owned treatment works as defined in 40 CFR 501.2 (15A NCAC 2D.1202) [Added March 2001].
- *Power Take Off* - a device used to transfer mechanical energy from a heavy-duty vehicle's propulsion engine to equipment that supplies mechanical, pneumatic, hydraulic, or electric power to non-vehicular mechanical, pneumatic, hydraulic, or electrically operated devices (15A NCAC 2D.1010 (a)) [Added March 2010].
- *Printing* - the formation of words, designs and pictures, usually by a series of application rolls each with only partial coverage (15A NCAC 2D.0936) [Citation Revised March 2007].
- *Public Pick-up* - the removal of refuse, yard trimmings, limbs, or other plant material from a residence by a governmental agency, private company contracted by a governmental agency or municipal service (15A NCAC 2D.1902) [Added March 2006].
- *Public Road* - any road that is part of the State highway system; or any road, street, or right-of-way dedicated or maintained for public use (15A NCAC 2D.1902) [Added March 2006].
- *Publication Rotogravure Printing* - printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials (15A NCAC 2D.0936) [Citation Revised March 2007].
- *Queue Area* - an area used by heavy-duty vehicles waiting to provide or receive services (15A NCAC 2D.1010 (a)) [Added March 2010].
- *RACT Limitation* - the numerical NO_x emission limitation established in accordance with 15A NCAC 2D.1400 to satisfy the requirements for RACT (15A NCAC 2D.1401).
- *RACT Standard* - the method, other than the establishment of a RACT limitation, established in accordance with 15A NCAC 2D.1400 to satisfy the requirements for RACT (15A NCAC 2D.1401).
- *Reasonable Assurance* - a demonstration to the Director that a method, procedure, or technique is possible and practical for a source or facility under the expected operating conditions (15A NCAC 2D.1401).

- *Reasonably Available Control Technology (RACT)* - the lowest emission limitation for NO_x that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (15A NCAC 2D.1401).
- *Reasonable Effort* - the proper installation of technology designed to meet the requirements for RACT and the optimization of such technology, in accordance to the manufacturer's recommendations or other similar guidance for a period of not less than 6 mo, in an effort to meet the applicable RACT limitation for a source (15A NCAC 2D.1401).
- *Refuse* - any garbage, rubbish, or trade waste (15A NCAC 2D.0101).
- *Regional Office Supervisor* - the supervisor of personnel of the Division of Air Quality in a regional office of the Department of Environment and Natural Resources (15A NCAC 2D.1902) [Added March 2005].
- *Regulated Air Pollutant* - any of the following (15A NCAC 2Q.0103):
 1. nitrogen oxides or any VOC
 2. any pollutant for which there is an ambient air quality standard under Section 15A NCAC 2D.0400
 3. any pollutant regulated under 15A NCAC 2D.0524 or .0525 or 40 CFR Part 60, 61, or 63
 4. any pollutant subject to a standard promulgated under Section 112 of the Federal Clean Air Act or other requirements established under Section 112 of the Federal Clean Air Act, including Section 112(g) (but only for the facility subject to Section 112(g)(2), (j), or (r) of the Federal Clean Air Act
 5. any Class I or II substance listed under Section 602 of the Federal Clean Air Act.
- *Residual Oils* - those liquid or semi-liquid fractions of petroleum remaining after distillate oils, and fractions more volatile than distillate oils, have been removed (15A NCAC 2D.0602).
- *Roll Printing* - the application of words, designs, and pictures to a substrate by means of hard rubber or steel rolls (15A NCAC 2D.0936) [Citation Revised March 2007].
- *Rubbish* - solid or liquid wastes from residences, commercial establishments, or institutions (15A NCAC 2D.0101).
- *Rural Area* - an area that is primarily devoted to, but not necessarily limited to, the following uses: agriculture, recreation, wildlife management, state park, or any area of natural cover (15A NCAC 2D.0101).
- *Salvage Operation* - any business, trade, or industry engaged in whole or in part in salvaging or reclaiming any product or material, including, but not limited to, metal, chemicals, motor vehicles, shipping containers, or drums (15A NCAC 2D.0101).
- *Salvageable Items* - any product or material that was first discarded or damaged and then all, or part, was saved for future use, and include insulated wire, electric motors, and electric transformers (15A NCAC 2D.1902) [Added March 2005].
- *Same Location* - the same or contiguous property that is under common ownership or control including properties that are separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof including any municipality or other governmental unit, or any quasi-governmental authority (e.g., a public utility district or regional waste disposal authority) (15A NCAC 2D.1202) [Added March 2001].
- *Settling Tank* - a container which gravimetrically separates oils, grease, and dirt from petroleum solvent, together with the piping and ductwork used in the installation of the device (15A NCAC 2D.0945).

- *Sewage Sludge Incinerator* - any incinerator regulated under 40 CFR Part 503, Subpart E (15A NCAC 2D.1202).
- *Sewage Sludge Incinerator* - any incinerator regulated under 40 CFR Part 503, Subpart E (15A NCAC 2D.1202) [Added March 2001].
- *Shutdown* - the cessation of operation of a source or a part thereof or emission control equipment (15A NCAC 2D.0901).
- *Sludge Incinerator* - any incinerator regulated under Rule .1110 of this Subchapter but not under 40 CFR Part 503, Subpart E (15A NCAC 2D.1202) [Added March 2001].
- *Sludge Incinerator* - any incinerator regulated under Paragraph (a) (4) of Rule .0525 of this Subchapter but not under 40 CFR Part 503, Subpart E (15A NCAC 2D.1202).
- *Small Facility* - a facility that is not a Title V facility, a synthetic minor facility, a general facility, nor solely a transportation facility (15A NCAC 2Q.0202) [Added March 2003; Citation Revised March 2007].
- *Small HMIWI* -: (15A NCAC 2D.1202) [Added March 2001; Revised March 2003].
 1. a HMIWI whose maximum design waste burning capacity is less than or equal to 200 pounds per hour;
 2. a continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour; or
 3. a batch HMIWI whose maximum charge rate is less than or equal to 1,600 pounds per day.
- *Small Municipal Waste Combustor* - each municipal waste combustor unit with a combustion capacity greater than 38.8 tons per day but not more than 250 tons per day of municipal solid waste for which construction was commenced on or before September 20, 1994 (15A NCAC 2D.1202) [Added March 2001].
- *Small Remote HMIWI* - any small HMIWI which is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area (SMSA) and which burns less than 2,000 lb per week of hospital, medical and infectious waste. The 2,000 pound per week limitation does not apply during performance tests (15A NCAC 2D.1202) [Added March 2001].
- *Smoke* - small gas-borne particles resulting from incomplete combustion, consisting predominantly of carbon, ash, and other burned or unburned residue of combustible materials that form a visible plume (15A NCAC 2D.0101).
- *Solvent* - organic materials which are liquid at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents (15A NCAC 2D.0901).
- *Solvent Cleaning Operation* - the use of solvents containing volatile organic compounds to clean soils from metal, plastic, or other types of surfaces (15A NCAC 2Q.0803) [Added March 2001].
- *Solvent Filter* - a discrete solvent filter unit containing a porous medium which traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in the installation of this device (15A NCAC 2D.0945).
- *Solvent Metal Cleaning* - the process of cleaning soils from metal surfaces by cold cleaning or open top vapor degreasing or conveyORIZED degreasing (15A NCAC 2D.0930).
- *Solvent Recovery Dryer* - a class of dry cleaning dryers that employs a condenser to condense and recover solvent vapors evaporated in a closed-loop stream of heated air, together with the piping and ductwork used in the installation of this device (15A NCAC 2D.0945).

- *Source* - any stationary article, machine, process equipment, or other contrivance, or combination thereof, or any tank-truck, trailer or railroad tank car from which air pollutants emanate or are emitted, either directly or indirectly (15A NCAC 2D.0101).
- *Standard Conditions* - a temperature of 68°F and pressure of 29.92 in. of mercury (15A NCAC 2D.0901).
- *Stage I* - vapor control systems that minimize, collect, and transfer vapors in a gasoline storage tank, displaced by the incoming gasoline, which are routed through pipes and hoses back into the tank truck tank to be transported to where the truck is loaded and the vapors are recovered or destroyed. Vent lines on storage tanks with vapor control systems use pressure release valves or flow restrictors to minimize releases to the atmosphere (15A NCAC 2D.0901) [Added March 2009].
- *Startup* - the setting in operation of a source or emission control equipment (15A NCAC 2D.0901).
- *State Parks* - State Parks as defined in G.S. 113-44-9 (15A NCAC 2D.1801) [Added March 2001].
- *Stationary Internal Combustion Engine* - an internal combustion engine that is not self propelled; however, it may be mounted on a vehicle for portability (15A NCAC 2D.1401).
- *Still* - a device used to volatilize, separate, and recover petroleum solvent from contaminated solvent, together with the piping and ductwork used in the installation of this device (15A NCAC 2D.0945).
- *Sulfur Oxides* - SO₂, sulfur trioxide, their acids, and the salts of their acids. The concentration of SO₂ is measured by the methods specified in 15A NCAC 2D (15A NCAC 2D.0101).
- *Sulfuric Acid Plant* - any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, or acid sludge, but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds (15A NCAC 2D.0602).
- *Synthetic Material* - man-made material, including tires, asphalt materials such as shingles or asphaltic roofing materials, construction materials, packaging for construction materials, wire, electrical insulation, and treated or coated wood (15A NCAC 2D.1902) [Added March 2007].
- *Synthetic Minor Facility* - a facility that would be a Title V facility except that the potential emissions are reduced below the thresholds in Paragraph (2) of this Rule by one or more physical or operational limitations on the capacity of the facility to emit an air pollutant. Such limitations must be enforceable by EPA and may include air pollution control equipment and restrictions on hours of operation, the type or amount of material combusted, stored, or processed (15A NCAC 2Q.0202) [Added March 2003; Citation Revised March 2007].
- *Technologically Feasible* - that an odor control device or a proposed solution to an odor problem has previously been demonstrated to accomplish its intended objective, and is generally accepted within the technical community. It is possible for technologically feasible solutions to have demonstrated their suitability on similar, but not identical, sources for which they are proposed to control. (15A NCAC 2D.1801) [Added March 2001].
- *Title V Facility* - a facility that is required to have a permit under Section .0500 of this Subchapter except perchloroethylene dry cleaners whose potential emissions are less than: (15A NCAC 2Q.0202) [Added March 2003]
 1. 10 tons per year of each hazardous air pollutant;
 2. 25 tons per year of all hazardous air pollutants combined; and
 3. 100 tons per year of each regulated air pollutant.
- *Total Hydrocarbons* - the organic compounds in the stack exit gas from a sewage sludge incinerator measured using a flame ionization detection instrument referenced to propane (15A NCAC 2D.1202).

- *Total Suspended Particulate* - any finely divided solid or liquid material, except water in uncombined form, that is or has been airborne as measured by methods specified in 15A NCAC 2D (15A NCAC 2D.0101).
- *Toxic Air Pollutant* - any of those carcinogens, chronic toxicants, acute systemic toxicants, or acute irritants that are listed in 15A NCAC 2D.1104 (see Appendix 1-16) (15A NCAC 2D.1103 and 2Q.0103).
- *Trade Wastes* - all solid, liquid, or gaseous waste materials or rubbish resulting from combustion, salvage operations, building operations, or the operation of any business, trade, or industry including, but not limited to, plastic products, paper, wood, glass, metal, paint, grease, oil and other petroleum products, chemicals, and ashes (15A NCAC 2D.0101).
- *Unadulterated Fossil Fuel* - fuel oils, coal, natural gas, or liquefied petroleum gas to which no toxic additives have been added that could result in the emissions of a toxic air pollutant listed under 15A NCAC 2D.1104 (see Appendix 1-16) (15A NCAC 2Q.0103).
- *Unadulterated Wood* - wood that is not painted, varnished, stained, oiled, waxed, or otherwise coated or treated with any chemical. Plywood, particle board, and resinated wood are not unadulterated wood (15A NCAC 2Q.0703) [Revised March 2007].
- *Utility Boiler* - a steam generating unit that is used for the generation of electricity for commercial sale (15A NCAC 2D.1401).
- *Volatile Organic Compound (VOC)* - any compound of carbon whose volatile content can be determined by the procedure described in 15A NCAC 2D.0913 or 2D.0939, excluding the following exempt compounds (15A NCAC 2D.0901):
 1. CO
 2. CO₂
 3. carbonic acid
 4. metallic carbides or carbonates
 5. ammonium carbonate
 6. methane
 7. ethane
 8. trichlorofluoromethane (chlorofluorocarbon 11)
 9. dichlorodifluoromethane (chlorofluorocarbon 12)
 10. chlorodifluoromethane (chlorofluorocarbon 22)
 11. trifluoromethane (fluorocarbon 23)
 12. trichlorotrifluoroethane (chlorofluorocarbon 113)
 13. dichlorotetrafluoroethane (chlorofluorocarbon 114)
 14. chloropentafluoroethane (chlorofluorocarbon 115)
 15. 1,1,1-trichloroethane (methyl chloroform)
 16. dichloromethane (methylene chloride)
 17. dichlorotrifluoroethane (hydrochlorofluorocarbon 123)
 18. tetrafluoroethane (hydrofluorocarbon 134a)
 19. dichlorofluoroethane (hydrochlorofluorocarbon 141b)
 20. chlorodifluoroethane (hydrochlorofluorocarbon 142b)
 21. 2-chloro-1,1,1,2-tetrafluoroethane (hydrochlorofluorocarbon 124)
 22. pentafluoroethane (hydrofluorocarbon 125)
 23. 1,1,2,2-tetrafluoroethane (hydrofluorocarbon 134)
 24. 1,1,1-trifluoroethane (hydrofluorocarbon 143a)
 25. 1,1-difluorocarbon (hydrofluorocarbon 152a)
 26. perfluorocarbon compounds that fall into these classes:
 - a. cyclic, branched, or linear completely fluorinated alkanes
 - b. cyclic, branched, or linear completely fluorinated ethers with no unsaturations
 - c. cyclic, branched, or linear completely fluorinated tertiary amines with no unsaturations

- d. sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.
- *Washer* - a machine which agitates fabric articles in a petroleum solvent bath and spins the articles to remove the solvent, together with the piping and ductwork used in the installation of this device (15A NCAC 2D.0945) [Citation Revised March 2008].

**AIR EMISSIONS MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	AE.2.1.NC.
State-Specific Requirements	
General	AE.5.1.NC.
Permits/Notifications/Exemptions	AE.6.1.NC. through AE.6.8.NC.
Management/Administrative	AE.7.1.NC. through AE.7.10.NC.
Operations	AE.8.1.NC. through AE.8.4.NC.
Emissions Limits	AE.9.1.NC. and AE.9.3.NC.
Steam Generators	AE.10.1.NC. through AE.10.6.NC.
Fuel-Burning Equipment	AE.15.1.NC. through AE.15.5.NC.
Gas Turbines/Stationary Engines	AE.20.1.NC.
Miscellaneous Incinerators	AE.25.1.NC. through AE.25.19.NC.
(NOTE: According to 15A NCAC 2D.1201(d), if an incinerator can be defined as being more than one type of incinerator, the following order is used to determine which standards and requirements to apply:	
- hazardous waste incinerators	
- sewage sludge incinerators	
- sludge incinerators	
- municipal waste combustors	
- commercial and industrial solid waste incinerators	
- hospital, medical or infectious waste incinerators (HMIWIs)	
- other solid waste incinerators	
- conical incinerators	
- crematory incinerators	
- other incinerators.) [Revised March 2001; Revised March 2006].	
Existing Commercial and Industrial Solid Waste Incinerators (CISWI)	AE.26.1.NC. through AE.26.9.NC.
Medical Waste Incinerators	
General	AE.30.1.NC. through AE.30.4.NC.
Monitoring	AE.32.1.NC. and AE.32.2.NC.
Reporting/Recording Requirements	AE.34.1.NC. and AE.34.2.NC.
Municipal Solid Waste Incinerators	AE.40.1.NC. through AE.40.6.NC.
Sewage Sludge Incinerators	AE.45.1.NC. through AE.45.4.NC.
Gasoline/Fuels	AE.55.1.NC.
Printing Presses and Graphic Arts	AE.60.1.NC. through AE.60.4.NC.
Fugitive Emissions	AE.65.1.NC.
Toxic Emissions	AE.67.1.NC. and AE.67.2.NC.
Dry Cleaning Operations	
Petroleum Solvent	AE.70.1.NC. and AE.70.2.NC.
Perchloroethylene	[Deleted]
Acid Production Units	AE.80.1.NC. through AE.80.3.NC.
Coating Operations	AE.100.1.NC. and AE.100.3.NC.
Degreasing Operations	
General	AE.115.1.NC. and AE.115.2.NC.
Cold Cleaning	AE.116.1.NC.
Vapor Cleaning	AE.117.1.NC. and AE.117.2.NC.
Miscellaneous VOC Operations	AE.125.1.NC. through AE.125.7.NC.
Open Burning	AE.130.1.NC. through AE.130.4.NC.
Vehicle Emissions	AE.135.1.NC. through AE.135.3.NC.
Mobile Sources	AE.140.1.NC.
Asphalt Paving Materials/Operations	AE.145.1.NC. and AE.145.2.NC.
Other Emissions/Sources	AE.155.1.NC. through AE.155.10.NC.

**AIR EMISSIONS MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

County/City-Specific Requirements	REFER TO CHECKLIST ITEMS: AE.160.1.NC. through AE.160.6.NC.
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GUIDANCE FOR APPENDIX USERS

REFER TO APPENDIX NUMBERS:	REFER TO APPENDIX TITLES:
1-1	Federal Regulations Incorporated by Reference
1-2	[Deleted]
1-3	Ambient Air Quality Standards
1-4	Sources Subject to and Exempt from Permit Standards
1-5	Nonattainment Areas
1-6	[Deleted]
1-7	Activities Exempt from Open Burning Limitations
1-8	CO and Hydrocarbon Standards for Motor Vehicles
1-9	Emissions Averaging
1-10	Seasonal Fuel Switching
1-11	Tune-up Requirements
1-12	[Deleted]
1-13	Toxic Air Pollutant Emission Limits and Exemptions
1-14	Determination of Date for Odor Management Plans for Swine Operations
1-15	Emission Standards for HMIWIs
1-16	Toxic Air Pollutant Guidelines
1-17	Toxic Air Pollutant Emission Exemptions
1-18	Emission Limits of Particulate Matter from Fuel Burning Indirect Heat Exchangers
1-19	Emission Limits of Particulate Matter from Wood Burning Indirect Heat Exchangers
1-20	Maximum Allowable NO _x Emission Rates for Boilers and Indirect Process Heaters

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
AE.2. MISSING CHECKLIST ITEMS AE.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

<p align="center">COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT North Carolina Supplement</p>	
<p align="center">REGULATORY REQUIREMENTS:</p>	<p align="center">REVIEWER CHECKS: March 2010</p>
<p>STATE-SPECIFIC REQUIREMENTS</p> <p>AE.5. General</p> <p>AE.5.1.NC. Facilities must control odorous emissions (15A NCAC 2D.0522).</p>	<p>Verify that the facility does not operate any plant without taking suitable [not defined] measures to control odorous emissions (e.g., wet scrubbers, incinerators, or other devices approved by the Commission).</p>

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>STATE-SPECIFIC REQUIREMENTS</p> <p>AE.6. Permits/Notifications</p> <p>AE.6.1.NC. Facilities must acquire air permits for specific activities (15A NCAC 2Q.0101(a) and 2Q.0110) [Citation Revised March 2007].</p> <p>AE.6.2.NC. Major stationary sources and modifications in nonattainment areas for ozone and CO must meet permit requirements (15A NCAC 2D.0530(c) and 2D.0531) [Revised March 2006].</p>	<p>Verify that sources subject to permitting requirements (see Appendix 1-4) have been permitted by the state.</p> <p>Verify that sources meet the terms and conditions of their permits.</p> <p>(NOTE: See Appendix 1-4 for a list of activities exempt from permit requirements.)</p> <p>Verify that a copy of all active permits is retained at the facility identified in the permit.</p> <p>(NOTE: This checklist item does not apply to the following:</p> <ul style="list-style-type: none"> - transportation centers such as airport and parking facilities - emission of pollutants at the new major stationary source or major modification located in the nonattainment area that are pollutants other than the pollutant or pollutants for which the area is nonattainment. (A major stationary source or major modification that is major for volatile organic compounds or nitrogen oxides is also major for ozone.) - emission of pollutants for which the source or modification is not major - a new source or modification which qualifies for exemption under the provision of 40 CFR 51.165(a)(4) - emission of compounds that are listed under 40 CFR 51.100(s) as having been determined to have negligible photochemical reactivity except CO.) <p>Verify that the facility does not operate major stationary sources or conduct major modifications in areas of nonattainment for ozone and CO (see Appendix 1-5) unless the facility has a permit to do so.</p> <p>Verify that the terms and conditions of any permit are met.</p> <p>Verify that, when a major stationary source or modification to a major stationary source subject to permitting requirements affects the visibility of a Class I area, the facility provides an analysis of the impairment to visibility that would occur as a result of the source or modification and general commercial, industrial, and other growth associated with it.</p> <p>(NOTE: All areas of the State are classified as Class II except the following areas are Class I:</p> <ul style="list-style-type: none"> - Great Smoky Mountains National Park - Joyce Kilmer Slickrock National Wilderness Area

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<p>AE.6.3.NC. New major stationary sources meeting specific criteria must comply with permit requirements (15A NCAC 2D.0532) [Revised March 2006].</p>	<ul style="list-style-type: none"> - Linville Gorge National Wilderness Area - Shining Rock National Wilderness Area - Swanquarter National Wilderness Area.) <p>(NOTE: This checklist item is not applicable to the following:</p> <ul style="list-style-type: none"> - transportation centers - emission of pollutants for which the area in which the new or modified source is located is designated as nonattainment - emission of pollutants for which the source or modification is not major - emission of pollutants other than SO₂, total suspended particulates, NO_x, and CO - a new or modified source whose impact will increase not more than: <ul style="list-style-type: none"> - 1.0 microgram/m³ of SO₂ on an annual basis - 5 microgram/m³ of SO₂ on a 24-h basis - 25 microgram/m³ of SO₂ on a 3-h basis - 1.0 microgram/m³ of total suspended particulates on an annual basis - 5 microgram/m³ of total suspended particulates on a 24-h basis - 1.0 microgram/m³ of NO₂ on an annual basis - 0.5 mg/m[3]of carbon monoxide on an 8-hour basis - 2 mg/m[3]of carbon monoxide on a one-hour basis - 1.0 ug/m[3]of PM(10) on an annual basis - 5 ug/m[3]of PM(10) on a 24-hour basis, at any locality that does not meet a national ambient air quality standard. - sources which are not major, unless secondary emissions are included in calculating the potential to emit - sources which are exempted by the provision in Section II.F. of Appendix S of 40 CFR Part 51 - temporary emission sources which will be relocated within 2 years - emissions resulting from the construction phase of the source.) <p>Verify that the facility does not operate new major stationary sources meeting the following criteria unless the facility has a permit to do so:</p> <ul style="list-style-type: none"> - are not subject to the permit requirements for major stationary sources and major modifications in areas of nonattainment for ozone and CO - would contribute to a violation of a National Ambient Air Quality Standard, but would not cause a new violation.
<p>AE.6.4.NC. Emergency generators or emergency use internal combustion engines exempted from a Title V permit must meet notification requirements (15A NCAC 2Q.0807) [Added March</p>	<p>(NOTE: These requirements apply to facilities whose only sources requiring a permit is one or more emergency generators or emergency use internal combustion engines and associated fuel storage tanks. For this purposes, potential emissions for emergency generators and emergency use internal combustion engines will be determined using actual fuel consumption.)</p> <p>(NOTE: Any facility whose emergency generators and emergency use internal</p>

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2001].	<p>combustion engines consume less than the following amounts are exempt from Title V permitting:</p> <ul style="list-style-type: none"> - 322,000 gal per yr of diesel fuel for diesel-powered generators - 62,500,000 cubic ft per yr of natural gas for natural gas-powered generators - 1,440,000 gal per yr of liquefied petroleum gas for liquefied petroleum gas-powered generators - 50,800 gal per yr of gasoline for gasoline-powered generators.) <p>Verify that the owner or operator of any emergency generator or emergency use internal combustion engine submit to the regional supervisors of the appropriate Division regional office by March 1 of each yr a report containing the following information:</p> <ul style="list-style-type: none"> - the name and location of facility - the types and quantity of fuel consumed by emergency generators and emergency use internal combustion engines - the signature, of the appropriate official certifying as to the truth and accuracy of the report. <p>Verify that records are kept to document types and quantities of fuels consumed for each of the previous 3 yr.</p> <p>Verify that any exceedance of fuel limit is reported within one week of its occurrence.</p>
AE.6.5.NC. [Moved March 2004].	<p>(NOTE: Moved to and repeated in AE.60.5.NC., AE.100.3.NC., and AE.125.7.NC.)</p>
AE.6.6.NC. Peak shaving generators exempt from Title V permitting requirements must meet reporting and recordkeeping requirements (15A NCAC 2Q.0808) [Added March 2006].	<p>(NOTE: This checklist item applies to facilities whose only sources requiring a permit is one or more peak shaving generators and their associated fuel storage tanks.)</p> <p>(NOTE: Any facility whose total fuel consumption by one or more peak shaving generators is exempted from the Title V permit requirements if the facility uses either:</p> <ul style="list-style-type: none"> - natural gas burning turbine driven generators that combust less than or equal to 5,625,000 therms per year - distillate oil burning turbine driven generators that combust less than or equal to 1,496,000 gallons per year - combined fuel (natural gas and 6 percent or more distillate oil) burning engine generators that combust less than or equal to 633,320 therms natural gas and 24,330 gallons distillate oil per year - distillate oil burning engine driven generators that combust less than or equal to 410,580 gallons per year.) <p>Verify that the owner or operator of any peak shaving generator submits to the</p>

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<p>AE.6.7.NC. Air curtain burners exempt from Title V permitting requirements must meet reporting and recordkeeping requirements (15A NCAC 2Q.0810) [Added March 2006; Revised March 2007].</p>	<p>regional supervisors of the appropriate Division regional office by March 1 of each year a report containing the following information:</p> <ul style="list-style-type: none"> - the name and location of the facility - the number and size of all peak shaving generators located at the facility - the total number of hours of operation of all peak shaving generators located at the facility - the actual total amount of energy production per year from all peak shaving generators located at the facility - the signature of the appropriate official certifying as to the truth and accuracy of the report. <p>Verify that, upon request, documentation is provided of the number, size, number of hours of operation, and amount and type of fuel burned per calendar year from all peak shaving generators located at the facility.</p> <p>Verify that records to document the amount of total energy production per year are retained for the previous 3 years.</p> <p>Verify that the owner or operator reports to the Director within one week if the total fuel combusted by all peak shaving generators located at the facility exceeds the applicable fuel limit.</p> <p>(NOTE: This checklist item applies to facilities whose only sources requiring a permit is one or more air curtain burners.)</p> <p>(NOTE: Air curtain burners combusting less than 8,100 tons of land clearing debris per year are exempt from the Title V permit requirements.)</p> <p>Verify that the owner or operator of any exempted air curtain burner submits to the regional supervisors of the appropriate Division regional office by March 1 of each year a report containing the following information:</p> <ul style="list-style-type: none"> - the name and location of the facility - the quantity of material combusted during the previous calendar year - the signature of the appropriate official as identified in Rule .0304(j) of this Subchapter certifying as to the truth and accuracy of the report. <p>Verify that the owner or operator of any exempted facility provides documentation of the quantity of material combusted to the Director upon request.</p> <p>Verify that records are retained for the previous 3 years to document the amount of material combusted per year for the previous 3 years.</p> <p>Verify that the owner or operator reports to the Director any exceedance of the combustion requirement within one week of its occurrence.)</p>

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<p>AE.6.8.NC. Gasoline service stations and dispensing facilities exempt from Title V requirements must meet reporting and recordkeeping standards (15A NCAC 2Q.0802) [Added March 2006].</p>	<p>(NOTE: This requirement is repeated in PO.20.1.NC.)</p> <p>(NOTE: This checklist item applies to all gasoline dispensing facilities and gasoline service stations and to delivery vessels delivering gasoline to a gasoline dispensing facility or gasoline service station.)</p> <p>(NOTE: Any gasoline service station or gasoline dispensing facility that has an annual throughput, on a calendar month rolling average basis, of less than 15,000,000 gallons is exempt from the Title V requirements.)</p> <p>Verify that any gasoline service station or gasoline dispensing facility submits a report under the following conditions:</p> <ul style="list-style-type: none"> - annual throughput exceeds 10,000,000 gallons, by the end of the month following the month that throughput exceeds 10,000,000 gallons and every 12 months thereafter - annual throughput exceeds 13,000,000 gallons, by the end of the month following the month that throughput exceeds 13,000,000 gallons and every 6 months thereafter - annual throughput exceeds 15,000,000 gallons, by the end of the month following the month that throughput exceeds 15,000,000 gallons and submits a permit application. <p>Verify that the owner or operator of any exempted gasoline service station or gasoline dispensing facility submits a report containing the following information:</p> <ul style="list-style-type: none"> - the name and location of the gasoline service station or gasoline dispensing facility - the annual throughput of gasoline for each of the 12-month periods ending on each month since the previous report was submitted, including monthly gasoline throughput for each month required to calculate the annual gasoline throughput for each 12-month period - the signature of the appropriate official as identified in Rule .0304(j) of this Subchapter certifying as to the truth and accuracy of the report. <p>Verify that the owner or operator of any exempted gasoline service station or gasoline dispensing facility retains records to document annual throughput for all 12-month periods during the previous 3 years.</p> <p>Verify that the owner or operator reports to the Director any exceedance of an applicability limitation within one week of its occurrence.</p>

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<p>STATE-SPECIFIC REQUIREMENTS</p> <p>AE.7. Management/ Administrative</p> <p>AE.7.1.NC. Specific sources of air pollution must prepare a plan to reduce emissions during air pollution episodes (15A NCAC 2D.0304).</p> <p>AE.7.2.NC. Facilities experiencing a malfunction, breakdown of process or control equipment, or any other abnormal condition resulting in excess emissions lasting for more than 4 h must take specific steps (15A NCAC 2D.0535(f) and (g)) [Revised March 2002].</p>	<p>(NOTE: This checklist item applies to any of the following sources of air pollution and to any sources emitting 100 ton/yr or more of any one pollutant:</p> <ul style="list-style-type: none"> - coal- or oil-fired process steam generating facilities - municipal and commercial refuse disposal operations - other sources specified by the Commission.) <p>Verify that sources prepare a plan to reduce the emissions of air pollutants into the outdoor atmosphere during periods of an air pollution episode.</p> <p>Verify that the plan is consistent with good industrial practices and safe operating procedures.</p> <p>Verify that, at the emission alert level, the following general steps are taken:</p> <ul style="list-style-type: none"> - there is no open burning of trade waste, vegetation, refuse, or debris in any form - the use of incinerators for the disposal of any form of solid waste is limited to the hours between noon and 4 p.m. - facilities operating fuel burning equipment requiring boiler lancing or soot blowing perform such operations only between the hours of noon and 4 p.m. - facilities operating motor vehicles eliminate all unnecessary operations. <p>Verify that, if the facility experiences a malfunction, breakdown of process or control equipment, or any abnormal conditions resulting in excess emissions lasting for more than 4 h, the facility:</p> <ul style="list-style-type: none"> - notifies the Director or his designee of any such occurrence by 9:00 a.m. Eastern time of the Division's next business day after becoming aware of the occurrence and describes all of the following: <ul style="list-style-type: none"> - name and location of the facility - nature and cause of the malfunction or breakdown - time when the malfunction or breakdown is first observed - expected duration - an estimated rate of emissions - notifies the Director or his designee immediately when corrective measures have been accomplished - submit to the Director within 15 days after request a written report including: <ul style="list-style-type: none"> - name and location of the facility - identification or description of processes and control devices involved

COMPLIANCE CATEGORY: AIR EMISSIONS MANAGEMENT North Carolina Supplement	
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<p>AE.7.3.NC. Exceptions to source monitoring must meet specific requirements (15A NCAC 2D.0604) [Added March 2003].</p>	<ul style="list-style-type: none"> in the malfunction or breakdown - cause and nature of the event - time and duration of the violation or expected duration of excess emission if the malfunction or breakdown has not been fixed - estimated quantity of pollutant emitted - steps taken to control emissions and to prevent recurrences and, if the malfunction or breakdown has not been fixed, steps planned to be taken - any other pertinent information requested by the Director. <p>(NOTE: Excess emissions during start-up and shut-down are considered a violation if the owner or operator cannot demonstrate that the excess emissions are unavoidable.)</p> <p>Verify that the installation, to the extent practicable, operates the source and any associated air pollution control equipment or monitoring equipment in a manner consistent with best practicable air pollution control practices to minimize emissions during startup and shutdown.</p> <p>(NOTE: Section .0600 applies to all persons subject to 2D, Air pollution Control Requirements and 2Q, Air Quality Permit Procedures. Other monitoring, recordkeeping, and reporting requirements may also apply.)</p> <p>Verify that, unless a specific rule specifies otherwise, monitoring is not required during a period of monitoring system malfunction if the owner or operator of the source shows, to the satisfaction of the Director, the following:</p> <ul style="list-style-type: none"> - the malfunction was unavoidable - is being repaired as expeditiously as practicable - no applicable requirements are violated. <p>Verify that, when system repairs or adjustments have been made, documentation of continuous monitoring system performance is available if the Director requests proof.</p> <p>(NOTE: Malfunctions of the monitoring system that result from inadequate or poor operation and maintenance practices will not be exempted.)</p> <p>Verify that a source that operates less than 30 days per 12-month period maintain records to document that the source is operated less than 30 days per 12-month period.</p> <p>(NOTE: The owner or operator of a source exempted from needing a permit by 15A NCAC 2Q.0102 is not required to monitor emissions from that source unless:</p> <ul style="list-style-type: none"> - required by a specific rule of Subchapter 2D or Subchapter 2Q - required as a part of an enforcement settlement.) <p>Verify that records document that the source qualifies for the permit exemption.</p>

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<p>AE.7.4.NC. Source monitoring must meet specific recordkeeping and reporting requirements (15A NCAC 2D.0605) [Added March 2003].</p>	<p>(NOTE: Section .0600 applies to all persons subject to 2D, Air pollution Control Requirements and 2Q, Air Quality Permit Procedures. Other monitoring, recordkeeping, and reporting requirements may also apply.)</p> <p>Verify that the following records are maintained:</p> <ul style="list-style-type: none"> - records detailing all malfunctions - records of all testing conducted - records of all monitoring - records detailing activities relating to any compliance. <p>Verify that, for unpermitted sources, records necessary to determine compliance with requirements in Subchapter 2D or Subchapter 2Q are maintained.</p> <p>Verify that the monitoring, frequency of monitoring, the type of reports specified in the source permit are met.</p> <p>Verify that copies of all records and reports generated are retained for a period of 2 years after the date on which the record was made or the report submitted, except that the Director may extend the retention period in particular instances when necessary.</p> <p>Verify that all records and reports generated are made available to personnel of the Division for inspection.</p>
<p>AE.7.5.NC. Specific sources must meet specific monitoring and reporting requirements (15A NCAC 2D.0606) [Added March 2003].</p>	<p>(NOTE: This requirement is repeated in AE.10.3.NC. for fossil fuel-fired steam generators. Sources covered by Rule .0524 (New Source Performance Standards) are exempt from these requirements.)</p> <p>Verify that the following sources are monitored as described in Paragraph 2, 3.3, through 3.8 of Appendix P of 40 CFR Part 51:</p> <ul style="list-style-type: none"> - nitric acid plants - sulfuric acid plants - petroleum refineries. <p>Verify that excess emissions recorded by the monitoring systems are reported no later than 30 days after the end of the quarter to the Division in the manner described in Paragraphs 4 and 5.1 through 5.3.3 of Appendix P of 40 CFR Part 51 except that a six-minute time period is deemed as an appropriate alternative opacity averaging period.</p> <p>(NOTE: For emissions of sulfur dioxide, fuel analysis may be used in place of a continuous emissions monitoring system if the source is not required to monitor emissions of sulfur dioxide using a continuous emissions monitoring system under</p>

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	<p>another state or federal rule.)</p> <p>Verify that the owner or operator of the source conducts a daily zero and span check of the continuous opacity monitoring system following the manufacturer's recommendations.</p> <p>Verify that the following is reported to the Director no later than 30 days following the end of the quarter:</p> <ul style="list-style-type: none"> - for fuel analysis per shipment <ul style="list-style-type: none"> - the quantity and type of fuels burned - the BTU value - the sulfur content in percent by weight - the calculated sulfur dioxide emission rates expressed in the same units as the applicable standard. - for continuous monitoring of emissions: <ul style="list-style-type: none"> - the daily calculated sulfur dioxide and nitrogen oxide emission rates expressed in the same units as the applicable standard for each day - other information required under Appendix P of 40 CFR Part 51. <p>Verify that, if emission testing for compliance with the sulfur dioxide emission standard is required, the testing is done according to 40 CFR Part 60, Appendix A, Method 6.</p> <p>Verify that, if emission testing for compliance with the nitrogen oxide emission standard is required, the testing is done according to 40 CFR Part 60, Appendix A, Method 7.</p>
AE.7.6.NC. [Deleted March 2004].	(NOTE: See AE.10.4.NC. for 15A NCAC 2D.0607.)
AE.7.7.NC. [Deleted March 2004].	(NOTE: See AE.10.5. for 15A NCAC 2D.0608.)
AE.7.8.NC. Other sources must meet specific monitoring and reporting requirements (15A NCAC 2D.0611) [Added March 2003].	<p>(NOTE: Section .0600 applies to all persons subject to 2D, Air pollution Control Requirements and 2Q, Air Quality Permit Procedures. Other monitoring, recordkeeping, and reporting requirements may also apply.)</p> <p>(NOTE: This applies to sources or air pollutants, including toxic air pollutants, from sources that are not covered.0606 (see AE.7.5.NC.), .0607 (see AE.10.4.NC.), .0608 (see AE.10.5.NC.), or .0610 (see AE.67.1.NC.).</p> <p>Verify that records of production rates, throughputs, material usage, and other process operational information as is necessary to determine compliance with the</p>

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<p>AE.7.9.NC. Title V facilities and facilities with actual emissions of 25 tons/year located in specific counties must submit annual emission reports (15A NCAC 2Q.0207) [Added March 2005; Revised March 2008].</p>	<p>facility's permit and all applicable requirements are maintained.</p> <p>Verify that any required monitoring instruments are installed, calibrated, operated, and maintained, in accordance with applicable performance specifications in 40 CFR Part 60 Appendix B, process and control equipment monitoring instruments or procedures as necessary to demonstrate good operation and maintenance.</p> <p>Verify that a quality assurance program is maintained.</p> <p>Verify that data and reports of any monitoring instruments or procedures necessary to document that good operation and maintenance is achieved are maintained in writing.</p> <p>Verify that the owner or operator of a Title V facility reports by June 30th of each year the actual emissions during the previous calendar year of the following:</p> <ul style="list-style-type: none"> - volatile organic compounds - nitrogen oxides - total suspended particulates - sulfur dioxide - fluorine - hydrogen chloride - hydrogen fluoride - hydrogen sulfide - methyl chloroform - methylene chloride - ozone - chlorine - hydrazine - phosphine - particulate matter (PM10) - carbon monoxide - lead - perchloroethylene. <p>Verify that the owner or operator of a facility that has actual emissions of 25 tons per year or more of nitrogen oxides or volatile organic compounds reports, by June 30th of each year, the actual emissions of nitrogen oxides and volatile organic compounds during the previous calendar year, if the facility is in the following locations:</p> <ul style="list-style-type: none"> - Cabarrus County - Davidson County - Durham County - Forsyth County - Gaston County - Guilford County - Lincoln County

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<p>AE.7.10.NC. Air emission test methods and procedures must meet specific requirements (15A NCAC 2D.2602 and 2D.2603) [Added March 2009].</p>	<ul style="list-style-type: none"> - Mecklenburg County - Rowan County - Union County - Wake County - Davidson Township and Coddle Creek Township in Iredell County - Dutchville Township in Granville County - that part of Davie County bounded by the Yadkin River, Dutchmans Creek, North Carolina Highway 801, Fulton Creek and back to the Yadkin River. <p>(NOTE: Transportation facilities are exempt from the 25 ton per year requirement.)</p> <p>(NOTE: The annual reporting requirement begins with calendar year 2007 emissions for facilities in Cabarrus, Lincoln, Rowan, and Union counties and Davidson Township and Coddle Creek Township in Iredell County.)</p> <p>Verify that the final test report describes the training and air testing experience of the person directing the air test.</p> <p>Verify that the owner or operator of the source arranges for air emission testing protocols to be provided to the Director prior to air pollution testing.</p> <p>Verify that any person proposing to conduct an emissions test to demonstrate compliance with an applicable standard notifies the Director at least 15 days before beginning the test so that the Director may at his option observe the test.</p> <p>Verify that the testing protocols includes:</p> <ul style="list-style-type: none"> - an introduction explaining the purpose of the proposed test, including identification of the regulations and permit requirements for which compliance is being demonstrated and the allowable emission limits - a description of the facility and the source to be tested - a description of the test procedures (sampling equipment, analytical procedures, sampling locations, reporting and data reduction requirements, and internal quality assurance and quality control activities) - any modifications made to the test methods referenced in the protocol - a description of how production or process data will be documented during testing. <p>Verify that the tester does not deviate from the protocol unless the tester documents the deviation.</p> <p>Verify that the final air emission test report is submitted to the Director not later than 30 days after sample collection.</p> <p>(NOTE: The Director shall make the final determination regarding any testing procedure deviation and the validity of the compliance test.)</p>

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STATE-SPECIFIC REQUIREMENTS AE.8. Operations AE.8.1.NC. During declared air pollution episodes, facilities must take specific actions (15A NCAC 2D.0303). AE.8.2.NC. Sources must take steps to reduce emissions during air pollution episodes at the emission alert level (15A NCAC 2D.0305). AE.8.3.NC. Sources must take specific steps during air pollution episodes at the emission warning level (15A NCAC 2D.0306).	<p>Verify that, during any air pollution episode, any facility responsible for the operation of a source of air pollution takes all air pollution alert actions required for that source and puts into effect the preplanned program for that episode.</p> <p>Verify that, at the emission alert level, coal- or oil-fired electric power generating facilities take the following steps:</p> <ul style="list-style-type: none"> - use fuels having low ash and sulfur content - perform boiler lancing and soot blowing between noon and 4 p.m. - divert electric power generation to facilities outside of alert area. <p>Verify that, at the emission alert level, coal- or oil-fired process steam generating facilities take the following steps:</p> <ul style="list-style-type: none"> - use fuels having low ash and sulfur content - perform boiler lancing and soot blowing between noon and 4 p.m. - reduce steam load demands consistent with continuing plant operation. <p>Verify that, at the emission alert level, municipal or commercial refuse disposal operations limit burning of refuse in incinerators to hours between noon to 4 p.m.</p> <p>Verify that, at the emission warning level, the following general steps are taken:</p> <ul style="list-style-type: none"> - there is no open burning of trade waste, refuse, vegetation, or debris in any form - the use of incinerators for disposal of solid waste or liquid waste is prohibited - facilities operating fuel burning equipment requiring boiler lancing or soot blowing perform such operations only between noon and 4 p.m. - facilities operating motor vehicles minimize their use through car pools and increased use of public transportation. <p>Verify that, at the emission warning level, coal- or oil-fired electric power generating facilities take the following steps:</p> <ul style="list-style-type: none"> - use fuels having the lowest ash and sulfur content - perform boiler lancing and soot blowing between noon and 4 p.m.

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<p>AE.8.4.NC. Sources must take specific steps during air pollution episodes at the emission emergency level (15A NCAC 2D.0307).</p>	<ul style="list-style-type: none"> - divert electric power generation to facilities outside of warning area. <p>Verify that, at the emission warning level, coal- or oil-fired process steam generating facilities take the following steps:</p> <ul style="list-style-type: none"> - use fuels having the lowest ash and sulfur content - perform boiler lancing and soot blowing between noon and 4 p.m. - reduce steam load demands consistent with continuing plant operation - prepare to use the plan of action to be taken if an emergency develops. <p>Verify that, at the emission warning level, municipal or commercial refuse disposal operations stops incinerating waste.</p> <p>Verify that, at the emission emergency level, the following general steps are taken:</p> <ul style="list-style-type: none"> - there is no open burning of trade waste, vegetation, refuse, or debris in any form - the use of incinerators for the disposal of any form of solid waste is prohibited - all places of employment described below immediately cease operations: <ul style="list-style-type: none"> - mining and quarrying of nonmetallic minerals - all manufacturing establishments except those required to have in force an air pollution emergency plan - all construction work involving grading or other operations which generate dust - all wholesale and retail establishments, except pharmacies and stores primarily engaged in the sale of food - all commercial and manufacturing establishments, automobile repair services and garages, laundries, barbershops, beauty shops and motion picture theaters - elementary and secondary schools, colleges, universities, and professional schools. <p>Verify that, at the emission emergency level, coal- or oil-fired electric power generating facilities take the following steps:</p> <ul style="list-style-type: none"> - use fuels having the lowest ash and sulfur content - perform boiler lancing and soot blowing between noon and 4 p.m. - divert electric power generation to facilities outside of emergency area. <p>Verify that, at the emission warning level, coal- or oil-fired process steam generating facilities take the following steps:</p> <ul style="list-style-type: none"> - reduce heat and steam demands to that absolutely necessary to prevent equipment damage - perform boiler lancing and soot blowing between noon and 4 p.m. - take the action called for in the abatement plan.

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	Verify that, at the emission emergency level, municipal or commercial refuse disposal operations stops incinerating waste.

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<p>STATE-SPECIFIC REQUIREMENTS</p> <p>AE.9. Emissions Limits</p> <p>AE.9.1.NC. Facilities must not cause or contribute to an exceedance of ambient air quality standards or toxic air pollutant guidelines (15A NCAC 2D.0402, 2D.0403, 2D.0404, 2D.0405, 2D.0407, 2D.0408, 2D.0409, 2D.0410 and 2D.1104) [Revised March 2005].</p> <p>AE.9.2.NC. Industrial processes and fuel burning operations must limit visible emissions (15A NCAC 2D.0521(a) through (f)) [Revised March 2001; Revised March 2004; Revised March 2008].</p>	<p>Verify that the facility does not cause or contribute to violations of the ambient air quality standards set forth in Appendix 1-3.</p> <p>Verify that a facility does not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the premises (adjacent property boundary) to any significant ambient air concentration that may adversely affect human health (see Appendix 1-16).</p> <p>(NOTE: This requirement applies to all fuel burning sources and to other processes that may have a visible emission. However, sources subject to a visible emission standard in Rules, .0508, .0524, .0543, .0544, .1110, .1111, .1205, .1206, .1210, or .1211 will meet that standard. This requirement does not apply to engine maintenance, rebuilding, and testing activities where controls are infeasible, except it does apply to the testing of peak shaving and emergency generators.)</p> <p>Verify that, for sources manufactured as of 1 July 1971, visible emissions do not exceed 40 percent opacity when averaged over a 6-min period.</p> <p>(NOTE: The 6-min averaging period may exceed 40 percent if the following conditions are met:</p> <ul style="list-style-type: none"> - no 6-min periods averaging exceeds 90 percent opacity - no more than one 6-min period exceeds 40 percent in any hour - no more than 4 6-min periods exceed 40 percent opacity in any 24-hour period - source is not required to comply with AE.9.3.NC.) <p>Verify that, for sources manufactured after 1 July 1971, visible emissions do not exceed 20 percent opacity when averaged over a 6-min period.</p> <p>(NOTE: The 6-min averaging period may exceed 20 percent if the following conditions are met:</p> <ul style="list-style-type: none"> - no 6-min periods averaging exceeds 87 percent opacity - no more than one 6-min period exceeds 20 percent in any hour - no more than 4 6-min periods exceed 20 percent opacity in any 24-hour period - source is not required to comply with AE.9.3.NC.)

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<p>AE.9.3.NC. Industrial processes and fuel burning operations required to operate continuous opacity monitoring systems must meet visible emissions limits (15A NCAC 2D.0521 (g)) [Added March 2001; Revised March 2004; Revised March 2008].</p>	<p>(NOTE: Where the presence of uncombined water is the only reason for failure to comply with visible emissions limitations, limitations do not apply.)</p> <p>(NOTE: Sources manufactured after 1 July 1971, may be able to meet the less-stringent requirements for sources manufactured as of 1 July 1971, if:</p> <ul style="list-style-type: none"> - the facility demonstrates to the Director compliance with applicable particulate mass emissions standards - the facility submits to the Director necessary data to show that emissions up to those allowed will not violate any national ambient air quality standard.) <p>(NOTE: The burden of proving these conditions are on the owner or operator of the source.)</p> <p>Verify that sources required to install, operate, and maintain continuous opacity monitoring systems (COMS), the opacity limit does not exceed the following:</p> <ul style="list-style-type: none"> - no more than 4 6-min periods exceed the opacity standard in any one day - the percent of excess emissions (defined as the percentage of monitored operating time in a calendar quarter above the opacity limit) does not exceed 0.8 percent of the total operating hours. <p>(NOTE: Startups, shutdowns, maintenance periods when fuel is not combusted, and malfunctions approved as such do not have to meet the emission limitation. If a source operates less than 500 h during a calendar quarter, the percent of excess emissions is calculated by including hours operated immediately previous to this quarter until 500 operational h are obtained.)</p>

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<p>AE.10.3.NC. Fossil fuel-fired steam generators must meet monitoring and reporting requirements (15A NCAC 2D.0606) [Revised March 2004].</p>	<p>than the next boiler or process outage that would provide for an orderly repair or correction of the malfunction or 15 days, whichever is the shorter time interval.</p> <p>(NOTE: If it is anticipated that the malfunction would continue for more than 15 days, a case-by-case repair schedule is established by the Director in conjunction with the source.)</p> <p>Verify that logs are maintained to show that the operation and maintenance parts of the malfunction abatement plan are implemented.</p> <p>Verify that amendments reflecting changes in any element of the approved plan are submitted to the Director for his approval.</p> <p>(NOTE: This requirement is repeated in AE.7.5.NC. for nitric acid plants, sulfuric acid plants and petroleum refineries. Sources covered by Rule .0524 (New Source Performance Standards) are exempt from these requirements.)</p> <p>Verify that the monitoring systems meet the minimum specifications described in Paragraphs 3.3 through 3.8 of Appendix P of 40 CFR Part 51.</p> <p>Verify that excess emissions recorded by the required monitoring systems is reported no later than 30 days after the end of the quarter to the Division in the manner described in Paragraphs 4 and 5.1 through 5.3.3 of Appendix P of 40 CFR Part 51 except that a six-minute time period is deemed as an appropriate alternative opacity averaging period as described in Paragraph 4.2 of Appendix P of 40 CFR Part 51.</p> <p>Verify that a daily zero and span check of the continuous opacity monitoring system is conducted following the manufacturer's recommendations and complies with the requirements of the quality assurance program.</p> <p>Verify that the owner or operator of the source reports to the Director no later than 30 days following the end of the quarter the following information:</p> <ul style="list-style-type: none"> - for fuel analysis per shipment: <ul style="list-style-type: none"> - quantity and type of fuels burned - British Thermal Unit value - sulfur content in percent by weight - the calculated sulfur dioxide emissions rate - for continuous monitoring of emissions: <ul style="list-style-type: none"> - the daily calculated sulfur dioxide and nitrogen oxide emission rates expressed in the same units as the applicable standard for each day - other information required under Appendix P of 40 CFR Part 51. <p>(NOTE: If emission testing for compliance with the sulfur dioxide emission standard is required, the testing must be done according to 40 CFR Part 60, Appendix A, Method 6. If emission testing for compliance with the nitrogen oxide</p>

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<p>AE.10.4.NC. Large wood and wood-fossil fuel combination units meeting specific criteria must comply with monitoring and reporting requirements (15A NCAC 2D.0607) [Revised March 2004].</p>	<p>emission standard is required, the testing must be done according to 40 CFR Part 60, Appendix A, Method 7.)</p> <p>(NOTE: This requirement applies to wood-fired steam generator units with a heat input from wood fuels (or the sum of the heat inputs from wood fuels and liquid or solid fossil fuels for generators not covered by Rule .0524 or .0606) that exceeds 250 million BTU per hour and with an annual average capacity factor greater than 30 percent as demonstrated to the Director by the owner or operator of the source.)</p> <p>Verify that the owner or operator of a large wood-fired steam generator installs, calibrates, maintains, and operates, as specified in 40 CFR Part 60 Appendix B Performance Specification 1, opacity continuous emission monitoring systems on all stacks discharging the flue gases from one or more steam generator units.</p> <p>Verify that a daily zero and span check of the opacity continuous emission monitoring system is conducted following the manufacturer's recommendations and complies with the requirements of the quality assurance program.</p>
<p>AE.10.5.NC. Large coal and residual oil burners meeting specific criteria must comply with monitoring and reporting requirements (15A NCAC 2D.0608) [Added March 2004; Revised March 2005].</p>	<p>Verify that, if burners meet the following criteria, the facility determines the SO₂ emissions into the ambient air from the burners:</p> <ul style="list-style-type: none"> - burn coal or residual oil - are not required by 15 NCAC 2D.0524 or 2D.0604 to monitor SO₂ - have a total heat input of more than 250 MBtu/h from coal and residual oil - has an annual average capacity factor greater than 30 percent as determined from the 3 most recent calendar year reports to the Federal Power Commission or as otherwise demonstrated to the Director by the owner or operator. <p>(NOTE: Once the unit is being monitored, it must continue to be monitored until its most recent three-calendar-year average capacity factor does not exceed 25 percent. Once the unit is not being monitored, it need not be monitored until its most recent three-calendar-year average capacity factor exceeds 35 percent.)</p> <p>(NOTE: If units required to be monitored have a common exhaust or if units required to be monitored have a common exhaust with units not required to be monitored, then the common exhaust may be monitored, and the sulfur dioxide emissions need not be apportioned among the units with the common exhaust.)</p> <p>Verify that the owner or operator of the source determine sulfur dioxide emissions by one of the following:</p> <ul style="list-style-type: none"> - an instrument for continuous monitoring and recording of sulfur dioxide emissions - analyses of representative samples of fuels to determine BTU value and percent sulfur content.

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AE.10.6.NC. Large boilers must comply with nitrogen oxides emissions (15A NCAC 2D.1418 (b)) [Added March 2005; Revised March 2010].	<p>(NOTE: If the source is required to monitor emissions of sulfur dioxide under any other state or federal rule with continuous emission monitoring systems, monitoring must be in compliance with the sulfur dioxide emission standard in Rule .0516 with a continuous emission monitoring system. Compliance with sulfur dioxide emission standards must be determined by averaging hourly continuous emission monitoring system values over a 24-hour block period beginning at midnight. To compute the 24-hour block average, the average hourly values are summed, and the sum is divided by 24. A minimum of 4 data points, equally spaced, is required to determine a valid hour value unless the continuous emission monitoring system is installed to meet the provisions of 40 CFR Part 75. If a continuous emission monitoring system is installed to meet the provisions of 40 CFR Part 75, the minimum number of data points will be determined by 40 CFR Part 75.)</p> <p>(NOTE: For emissions of sulfur dioxide, fuel analyses may be used in place of a continuous emissions monitoring system if the source is not required to monitor emissions of sulfur dioxide using a continuous emissions monitoring system.)</p> <p>Verify that a daily zero and span check of the continuous opacity monitoring system is conducted following the manufacturer's recommendations and complies with the requirements of the quality assurance program.</p> <p>Verify that the owner or operator of the source reports to the Director no later than 30 days following the end of the quarter the following information:</p> <ul style="list-style-type: none"> - for fuel analysis per shipment: <ul style="list-style-type: none"> - quantity and type of fuels burned - British Thermal Unit value - sulfur content in percent by weight - the calculated sulfur dioxide emissions rate - for continuous monitoring of emissions: <ul style="list-style-type: none"> - the daily calculated sulfur dioxide and nitrogen oxide emission rates expressed in the same units as the applicable standard for each day - other information required under Appendix P of 40 CFR Part 51. <p>(NOTE: If emission testing for compliance with the sulfur dioxide emission standard is required, the testing must be done according to 40 CFR Part 60, Appendix A, Method 6.)</p>
	<p>(NOTE: This checklist item is applicable to any fossil fuel-fired stationary boiler, combustion turbine, or combined cycle system having a maximum design heat input greater than 250 million Btu per hour which is permitted after October 31, 2000 and is not serving a generator with a nameplate capacity greater than 25 megawatts electrical and selling any amount of electricity.)</p> <p>Verify that emissions of nitrogen oxides do not exceed:</p>

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	<ul style="list-style-type: none"> - 0.17 pounds per million Btu for gaseous and solid fuels and 0.18 pounds per million Btu for liquid fuels if it is not covered under Rule .0530 (prevention of significant deterioration) or .0531 (nonattainment area major new source review) - 0.17 pounds per million Btu for gaseous and solid fuels and 0.18 pounds per million Btu for liquid fuels or best available control technology requirements of Rule .0530 of this Subchapter, whichever requires the greater degree of reduction, if it is covered under Rule .0530 of this Subchapter - lowest available emission rate technology requirements of Rule .0531 of this Subchapter if it is covered under Rule .0531 of this Subchapter.

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<p>AE.15.</p> <p>FUEL BURNING EQUIPMENT</p> <p>AE.15.1.NC. Fuel-burning operations must limit visible emissions (15A NCAC 2D.0521).</p> <p>AE.15.2.NC. Fuel-burning indirect heat exchangers must limit particulate emissions (15A NCAC 2D.0503) [Revised March 2008].</p>	<p>Verify that, for sources existing on 1 July 1971, visible emissions do not exceed 40 percent opacity when averaged over a 6-min period (except that 6-min periods averaging not more than 90 percent opacity may occur as long as they occur not more than once in any hour nor more than 4 times in any 24-h period).</p> <p>Verify that, for sources established after 1 July 1971, visible emissions do not exceed 20 percent opacity when averaged over a 6-min period (except that 6-min periods averaging not more than 87 percent opacity may occur as long as they do not occur more than once in any hour nor more than 4 times in any 24-h period).</p> <p>(NOTE: Where the presence of uncombined water is the only reason for failure to comply with visible emissions limitations, limitations do not apply.)</p> <p>(NOTE: Sources established after 1 July 1971, may, subject to both of the following conditions, receive an exception from the opacity standard:</p> <ul style="list-style-type: none"> - the facility demonstrates to the Director compliance with applicable particulate mass emissions standards - the facility submits to the Director necessary data to show that emissions up to those allowed will not violate any national ambient air quality standard.) <p>(NOTE: This checklist item does not apply to electric utility boilers.)</p> <p>(NOTE: Fuels include those such as coal, coke, lignite, peat, natural gas, and fuel oils, but exclude wood and refuse not burned as a fuel. When any refuse, products, or by-products of a manufacturing process are burned as a fuel rather than refuse, or in conjunction with any fuel, this emission limit applies.)</p> <p>Verify that the emission of particulate matter from combustion of a fuel in these indirect heat exchangers that are discharged from any stack or chimney into the atmosphere does not exceed the limits in Appendix 1-18:</p> <p>(NOTE: Maximum heat input is the total heat content of all fuels burned in a fuel burning indirect heat exchanger of which combustion products are emitted through a stack or stacks. The sum of maximum heat input of all fuel burning indirect heat exchangers at a plant site which are in operation, under construction, or permitted are considered as the total heat input.)</p> <p>(NOTE: For residential facilities or institutions (such as the military) whose primary fuel burning capacity is for comfort heat, only those fuel burning indirect heat exchangers located in the same power plant or building or otherwise physically interconnected (such as common flues, steam, or power distribution</p>

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	<p>line) are used to determine the total heat input.)</p> <p>Verify that any fuel burning equipment burning both wood and other fuels in combination or for wood and other fuel burning equipment operated so that emissions are measured on a combined basis, do not exceed emissions limits calculated by the equation:</p> $Ec = [(EW) (Qw) + (Eo) (Qo)]/Qt.$ <p>Where:</p> <ul style="list-style-type: none"> - Ec = emission limit for combination or combined emission source(s) in lb/MBtu - Ew = plant site emission limit for wood only in lb/MBtu - Eo = plant site emission limit for other fuels only in lb/MBtu - Qw = actual wood heat input to combination or combined emission source(s) in Btu/h - Qo = actual other fuels heat input to combination or combined emission source(s) in Btu/h - Qt = Qw + Qo and is the actual total heat input to combination or combined emission source(s) in Btu/h.
<p>AE.15.3.NC. Any source of combustion must meet specific SO₂ emission standards (15A NCAC 2D.0516) [Revised March 2004; Revised March 2008].</p>	<p>Verify that the emission of SO₂ from any source of combustion discharged from any vent, stack, or chimney does exceed 2.3 lb of SO₂ per MBtu input.</p> <p>(NOTE: SO₂ formed by the combustion of sulfur in fuels, wastes, ores, and other substances are included when determining compliance with this standard. Sulfur dioxide formed or reduced as a result of treating flue gases with sulfur trioxide or other materials is also be accounted for when determining compliance with this standard.)</p> <p>(NOTE: A source subject to an emission standard for sulfur dioxide in Rules .0524, .0527, .1110, .1111, .1205, .1206,.1210, or .1211 must meet the standard in that particular rule instead of the standard here.)</p>
<p>AE.15.4.NC. Any wood burning indirect heat exchangers must not exceed specific particulate emissions limits (15A NCAC 2D.0504) [Revised March 2003; Revised March 2008].</p>	<p>Verify that emissions of particulate matter from combustion of wood in indirect heat exchangers does not exceed the limits in Appendix 1-19.</p> <p>(NOTE: The heat content of wood is 8000 Btu/lb (dry-weight basis). The total of maximum heat inputs of all wood burning indirect heat exchangers at a site in operation, under construction, or with a permit is used to determine the allowable emission limit.)</p>

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AE.15.5.NC. [Deleted March 2004].	(NOTE: Moved to AE.10.3.NC.)

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<p>AE.20.</p> <p>GAS TURBINES/STATIONARY ENGINES</p> <p>AE.20.1.NC. Emergency generators at a facility whose only sources that would require a permit are emergency generators must meet specific requirements (15A NCAC 2Q.0903) [Added March 2009].</p>	<p>(NOTE: Emergency generator means a stationary internal combustion engine used to generate electricity only during the loss of primary power at the facility that is beyond the control of the owner or operator of the facility or during maintenance. An emergency generator may be operated periodically to ensure that it will operate.)</p> <p>Verify that emergency generators consume less than:</p> <ul style="list-style-type: none"> - 322,000 gallons per calendar year of diesel fuel - 48,000,000 cubic feet per calendar year of natural gas - 1,200,000 gallons per calendar year of liquified petroleum gas - 25,000 gallons per calendar year of gasoline for gasoline-powered generators - any combination of the fuels listed here provided the facility-wide actual emissions of each regulated air pollutant does not exceed 100 tons per calendar year. <p>Verify that the owner or operator of emergency generators complies with the following:</p> <ul style="list-style-type: none"> - .0516 (sulfur dioxide emissions from combustion sources) (see AE.15.3.NC.) - .0521 (control of visible emissions) (see AE.9.2.NC., AE.9.3.NC., and AE.15.1.NC.) - .0524 (new source performance standard) (see Appendix 1-1). <p>Verify that owner or operator of an emergency generator maintains records of the amount of fuel burned in the generator for each calendar year so that the Division can determine upon review of these records that the emergency generator qualifies to be covered under this rule.</p>

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<p>AE.25.</p> <p>MISCELLANEOUS INCINERATORS</p> <p>AE.25.1.NC. Conical incinerators designed to burn wood and agricultural waste must meet specific requirements (15A NCAC 2D.1207) [Revised March 2001; Revised March 2003; Revised March 2008].</p>	<p>Verify that each conical incinerator is equipped and maintained with:</p> <ul style="list-style-type: none"> - an underfire and an overfire forced air system and variable damper which is automatically controlled to ensure the optimum temperature range for the complete combustion of the amount and type of material waste being charged into the incinerator - a temperature recorder for continuously recording the temperature of the exit gas - a feed system capable of delivering the waste to be burned at a sufficiently uniform rate to prevent temperature from dropping below 800 deg F during normal operation, with the exception of one startup and one shutdown per day. <p>Verify that the conical incinerator is monitored and ambient particulate concentrations are reported using the appropriate method specified in 40 CFR Part 50 with the frequency specified in 40 CFR Part 58.</p> <p>(NOTE: The Director may require more frequent monitoring if measured particulate concentrations exceed the 24-h concentration allowed under 15A NCAC 2D .0400.)</p> <p>Verify that monitoring data is reported quarterly to the Division.</p> <p>Verify that the conical incinerator does not violate the ambient air standards found in Appendix 1-13</p> <p>Verify that the conical incinerator does not violate the opacity standards found in AE.9.2.NC.</p> <p>Verify that the distance a conical incinerator is located and operated from the nearest structure(s) in which people live or work is optimized to prevent air quality impact and approved by the Commission.</p> <p>Verify that new conical incinerators are in compliance with the requirements on startup.</p> <p>(NOTE: According to 15A NCAC 2D.1201(d), if an incinerator can be defined as being more than one type of incinerator, the following order is used to determine which standards and requirements to apply:</p> <ul style="list-style-type: none"> - hazardous waste incinerators - sewage sludge incinerators - sludge incinerators - municipal waste combustors

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	<ul style="list-style-type: none"> - commercial and industrial solid waste incinerators - hospital, medical or infectious waste incinerators (HMIWIs) - other solid waste incinerators - conical incinerators - crematory incinerators - other incinerators.) [Revised March 2001; Revised March 2006]. <p>(NOTE: Incinerator requirements do not apply to the following:</p> <ul style="list-style-type: none"> - afterburners, flares, fume incinerators, and other similar devices used to reduce emissions of air pollutants from processes, whose emissions are regulated as process emissions - any boilers or industrial furnaces that burn waste as a fuel, except hazardous waste - air curtain burners (which are subject to section 15A 2D.1900, open burning (see AE.130.NC.) - incinerators used to dispose of dead animals or poultry that meet all of the following criteria: <ul style="list-style-type: none"> - located on a farm and is owned and operated by the farm owner or operator incinerator is located - used solely to dispose of animals or poultry originating on the farm where the incinerator is located - not charged at a rate exceeding its design capacity - complies with visible emissions and odorous emissions requirements.)
AE.25.2.NC. [Deleted March 2001].	[NOTE: Regulations revised and renumbered.]
AE.25.3.NC. [Deleted March 2001].	[NOTE: Regulations revised and renumbered.]
AE.25.4.NC. [Deleted March 2001].	[NOTE: Regulations revised and renumbered.]
AE.25.5.NC. Incinerators must meet specific operational requirements (15A NCAC 2D.1208 (a), (c) and (d)) [Revised March 2001; Revised March 2003].	<p>(NOTE: See applicability Notes in AE.25.1.NC.)</p> <p>(NOTE: These requirements apply to any incinerator not covered under the requirements for hazardous waste incinerators, sewage sludge incinerators, municipal waste incinerators, or HMIWI.)</p> <p>(NOTE: If any incinerator subject to these requirements meets the following criteria, it is exempt from the emission standards for hydrogen chloride, mercury, toxics, and ambient standards:</p>

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<p>AE.25.6.NC. Incinerators must meet specific emission standards for particulate matter and visible emissions (15A NCAC 2D.1208 (a), (b) (2) and (3)) [Added March 2001; Revised March 2003].</p>	<ul style="list-style-type: none"> - is used solely to cremate pets - if the emissions of all toxic air pollutants from an incinerator and associated waste handling and storage are less than the levels listed in 15A NCAC 2Q.0711 (see Appendix 1-13).) <p>Verify that gases generated by the combustion of a crematory incinerator are subjected to a minimum temperature of 1600 deg F for not less than 1 s.</p> <p>Verify that all other incinerators not covered elsewhere meet both of the following requirements:</p> <ul style="list-style-type: none"> - gases generated by combustion are subjected to a minimum temperature of 1800 deg F for not less than 1 s - the temperature of 1800 deg F is maintained at least 55 min out of each 60 min period, but at no time does the temperature go below 1600 deg F. <p>Verify that, except during startup when the procedure has been approved in accordance, waste material is not loaded into any incinerator when the temperature is below the minimum required temperature.</p> <p>Verify that the incinerator has an automatic auxiliary burner capable of maintaining the required minimum temperature in the secondary chamber excluding the heat content of the wastes.</p> <p>(NOTE: The Director may require the owner or operator to test his incinerator to demonstrate compliance with all emission standards. The test methods and procedures described in Rule .0501 of this Subchapter and in 40 CFR Part 60 Appendix A and 40 CFR Part 61 Appendix B shall be used to determine compliance with emission rates. Method 29 of 40 CFR Part 60 shall be used to determine emission rates for metals. However, Method 29 shall be used to sample for chromium (VI), and SW 846 Method 0060 shall be used for the analysis.)</p> <p>(NOTE: See applicability Notes in AE.25.1.NC.)</p> <p>(NOTE: These requirements apply to any incinerator not covered under the requirements for hazardous waste incinerators, sewage sludge incinerators, municipal waste incinerators, or HMIWI.)</p> <p>(NOTE: If any incinerator subject to these requirements meets the following criteria, it is exempt from the emission standards for hydrogen chloride, mercury, toxics, and ambient standards:</p> <ul style="list-style-type: none"> - is used solely to cremate pets - if the emissions of all toxic air pollutants from an incinerator and associated waste handling and storage are less than the levels listed in 15A NCAC 2Q.0711 (see Appendix 1-13).)

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<p>AE.25.7.NC. Incinerators must meet specific emission standards (15A NCAC 2D.1208 (a), (b) (4) through (9)) [Added March 2001; Revised March 2003].</p>	<p>Verify that, for refuse charge rates between 100 and 2000 lb per h, the allowable emissions rate for particulate matter from any stack or chimney of any incinerator does not exceed the level calculated with the equation $E = 0.002P$, calculated to 2 significant figures, where "E" equals the allowable emission rate for particulate matter in lb per h and "P" equals the refuse charge rate in lb per h.</p> <p>Verify that, for refuse charge rates of 0 to 100 lb per h, the allowable emission rate of 0.2 lb per h is met.</p> <p>Verify that, for refuse charge rates of 2000 lb per h or greater the allowable emission rate of 4.0 lb per h is met.</p> <p>Verify that the owner or operator who chooses to limit particulate emissions from the incinerator to 0.08 grains per dry standard cubic foot corrected to 12 percent carbon dioxide, demonstrates that the particulate ambient air quality standards are not violated.</p> <p>(NOTE: To correct to 12 percent carbon dioxide, the measured concentration of particulate matter is multiplied by 12 and divided by the measured percent carbon dioxide.)</p> <p>(NOTE: Compliance with particulate matter standards is determined by averaging emissions over a block three-h period.)</p> <p>Verify that the incinerator complies with .0521 for the control of visible emissions (see AE.92.NC. and AE.9.3.NC.).</p> <p>Verify that any air curtain incinerator complies with .904 for the control of visible emissions (see AE.130.3.NC.).</p> <p>(NOTE: See applicability Notes in AE.25.1.NC.)</p> <p>(NOTE: These requirements apply to any incinerator not covered under the requirements for hazardous waste incinerators, sewage sludge incinerators, municipal waste incinerators, or HMIWI.)</p> <p>(NOTE: If any incinerator subject to these requirements meets the following criteria, it is exempt from the emission standards for hydrogen chloride, mercury, toxics, and ambient standards:</p> <ul style="list-style-type: none"> - is used solely to cremate pets - if the emissions of all toxic air pollutants from an incinerator and associated waste handling and storage are less than the levels listed in 15A NCAC 2Q.0711 (see Appendix 1-13).) <p>Verify that sulfur dioxide emissions are controlled (see AE.15.3.NC.).</p>

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<p>AE.25.8.NC. Incinerators must meet specific monitoring, recordkeeping, and reporting standards (15A NCAC 2D.1208 (e) [Added March 2001; Revised March 2003].</p>	<p>Verify that odorous emissions are controlled (see AE.5.1.NC.).</p> <p>Verify that emissions of hydrogen chloride are controlled such that they do not exceed 4 lb per h unless they are reduced by at least 90 percent by weight or to no more than 50 parts per million by volume corrected to seven percent oxygen (dry basis).</p> <p>(NOTE: Compliance with hydrogen chloride and mercury emissions is determined by averaging emissions over a one-h period.)</p> <p>Verify that emissions of mercury and mercury compounds from the stack or chimney does not exceed 0.032 lb per h.</p> <p>Verify that control of toxic air pollutants can be demonstrated (2Q.0700).</p> <p>Verify that, in addition to the ambient air quality standards in Section .0400 (see Appendix 1-13, the following ambient air quality standards, which are an annual average, in milligrams per cubic meter at 77°F (25°C) and 29.92 inches (760 mm) of mercury pressure and which are increments above background concentrations, are applied aggregately to all incinerators:</p> <ul style="list-style-type: none"> - arsenic and its compounds 2.3×10^{-7} - beryllium and its compounds 4.1×10^{-6} - cadmium and its compounds 5.5×10^{-6} - chromium (VI) and its compounds 8.3×10^{-8}. <p>(NOTE: The owner or operator of a facility with incinerators must demonstrate compliance with the ambient standards by following the procedures set out in Rule .1106 of this Subchapter. Modeling demonstrations must comply with the requirements of Rule .0533 of this Subchapter.)</p> <p>(NOTE: See applicability Notes in AE.25.1.NC.)</p> <p>(NOTE: These requirements apply to any incinerator not covered under the requirements for hazardous waste incinerators, sewage sludge incinerators, municipal waste incinerators, or HMIWI.)</p> <p>(NOTE: If any incinerator subject to these requirements meets the following criteria, it is exempt from the emission standards for hydrogen chloride, mercury, toxics, and ambient standards:</p> <ul style="list-style-type: none"> - is used solely to cremate pets - if the emissions of all toxic air pollutants from an incinerator and associated waste handling and storage are less than the levels listed in 15A NCAC 2Q.0711 (see Appendix 1-13).) <p>Verify that the owner or operator of an incinerator complies with the monitoring, recordkeeping, and reporting requirements in Section .0600 (see</p>

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	<p>AE.7.3.NC. through AE.7.8.NC.).</p> <p>Verify that incinerators, except an incinerator used to dispose of dead animals, maintain and operate a continuous temperature monitoring and recording device for the primary chamber and, where there is a secondary chamber, for the secondary chamber.</p> <p>(NOTE: The Director may require a temperature monitoring device for incinerators used to dispose of dead animals or poultry.)</p> <p>Verify that the owner or operator of an incinerator that has installed air pollution abatement equipment to reduce emissions of hydrogen chloride installs, operates, and maintains continuous monitoring equipment to measure pH for wet scrubber systems and rate of alkaline injection for dry scrubber systems.</p> <p>(NOTE: The Director will require the owner or operator of an incinerator with a permitted charge rate of 750 lb per h or more to install, operate, and maintain continuous monitors for oxygen or for carbon monoxide or both as necessary to determine proper operation of the incinerator. The Director may require the owner or operator of an incinerator with a permitted charge rate of less than 750 lb per h to install, operate, and maintain monitors for oxygen or for carbon monoxide or both as necessary to determine proper operation of the incinerator.)</p>
AE.25.9.NC. [Moved March 2004].	(NOTE: Moved to AE.26.1.NC.)
AE.25.10.NC. [Moved March 2004].	(NOTE: Moved to AE.26.2.NC.)
AE.25.11.NC. [Moved March 2004].	(NOTE: Moved to AE.26.3.NC.)
AE.25.12.NC. [Moved March 2004].	(NOTE: Moved to AE.26.4.NC.)
AE.25.13.NC. [Moved March 2004].	(NOTE: Moved to AE.26.5.NC.)

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AE.25.14.NC. [Moved March 2004].	(NOTE: Moved to AE.26.6.NC.)
AE.25.15.NC. [Moved March 2004].	(NOTE: Moved to AE.26.7.NC.)
AE.25.16.NC. [Moved March 2004].	(NOTE: Moved to AE.26.8.NC.)
AE.25.17.NC. Air curtain burners must meet permitting requirements (15A NCAC 2D.1904(a), (d), (e), and (g)) [Revised March 2005; Revised March 2008].	<p>(NOTE: Moved from AE.130.2.NC., March 2006.)</p> <p>Verify that air curtain burners located at permanent sites or where materials are transported from another site are not operated unless the state has issued permits allowing operation.</p> <p>(NOTE: Air permits are not required for air curtain burners located at temporary land clearings or right-of-way maintenance sites for less than 9 mo if they are not subject to 40 CFR 60.2245 through 60.2265, 60.2810 through 60.2870, 60.2970 through 60.2975, or 60.3062 through 60.3069.)</p> <p>(NOTE: Burners that have the potential to burn 8,100 tons of material or more per yr may be subject to Title V permitting procedures. Burners that burn 16,200 tons per year or more may be subject to Prevention of Significant Deterioration in 15A NCAC 2D.0530.)</p> <p>(NOTE: In addition to complying with these requirements, an air curtain burner is subject to:</p> <ul style="list-style-type: none"> - 40 CFR Part 60, Subpart CCCC that commenced construction after November 30, 1999, or that commenced reconstruction or modification on or after June 1, 2001, shall also comply with 40 CFR 60.2245 through 60.2265, or - 40 CFR Part 60, Subpart EEEE that commenced construction after December 9, 2004, or that commenced reconstruction or modification on or after June 16, 2006, shall also comply with 40 CFR 60.2970 through 60.2975.)
AE.25.18.NC. Air curtain burners must comply with specific conditions and stipulations (15A NCAC 2D.1904(a) and (b)) [Revised	<p>(NOTE: Moved from AE.130.3.NC., March 2006.)</p> <p>Verify that air curtain burners in particulate and ozone nonattainment areas cease operation in any area that has been forecasted to be in an Air Quality</p>

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March 2006; Revised March 2007; Revised March 2008].	<p>Action Day Code "Orange" or above.</p> <p>Verify that, at the time that the burning is initiated and the wind direction as forecasted by the National Weather Service, prevailing winds are away from any area (including public roads within 250 ft of the burning as measured from the edge of the pavement or other roadway surfaces) that may be affected by smoke, ash, or other air pollutants from the burning.</p> <p>Verify that only collected land clearing and yard waste materials are burned.</p> <p>Verify that heavy oils, asphaltic materials, items containing natural or synthetic rubber, tires, grass clippings, collected leaves, paper products, plastics, general trash, garbage, or any materials containing painted or treated wood materials are not burned.</p> <p>(NOTE: Leaves still on trees may be burned.)</p> <p>Verify that, when the Division of Forest Resources has banned burning for an area, fires are not started and materials are not added to existing fires in the area.</p> <p>Verify that burning is conducted only between 8:00 a.m. and 6:00 p.m.</p> <p>Verify that air curtain burners are operated no more than the maximum source operating hours per day and days per week except for temporary air curtain burners.</p> <p>Verify that operators of permitted air curtain burners are certified to read visible emissions and are onsite at all times during operation of the burner.</p> <p>Verify that air curtain burners are tested for visible emission within 90 days after initial operation and within 90 days before permit expiration.</p> <p>Verify that air curtain burners meet manufacturer's specifications for the operation and upkeep of burners to ensure complete burning of materials charged into the pit.</p> <p>Verify that manufacturer's specifications are kept onsite.</p> <p>Verify that, except during startup, visible emissions do not exceed 10 percent opacity when averaged over a 6-min period.</p> <p>(NOTE: One 6-min period with an average opacity of more than 10 percent but no more than 35 percent is allowed for any 1-h period.)</p> <p>Verify that, during startup, visible emissions do not exceed 35 percent opacity when averaged over a 6-min period.</p> <p>Verify that startups do not last more than 45 min. and that there is no more</p>

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<p>AE.25.19.NC. Air curtain burners must meet recordkeeping requirements (15A NCAC 2D.1904(c)) [Revised March 2005; Revised March 2008].</p>	<p>than one startup per day.</p> <p>(NOTE: Instead of complying with the opacity standards in this Subparagraph, air curtain burners subject to:</p> <ul style="list-style-type: none"> - 40 CFR 60.2245 through 60.2265 shall comply with the opacity standards in 40 CFR 60.2250 - 40 CFR 60.2810 through 60.2870 shall comply with the opacity standards in 40 CFR 60.2860 - 40 CFR 60.2970 through 60.2975 shall comply with the opacity standards in 40 CFR 60.2971 - 40 CFR 60.3062 through 60.3069 shall comply with the opacity standards in 40 CFR 60.3066.) <p>Verify that ash does not build up in the pit to a depth higher than 1/3 of the depth of the pit or to the point where the ash begins to impede combustion, whichever comes first.</p> <p>Verify that, before ash is removed, it is watered to prevent it from becoming airborne.</p> <p>Verify that materials loaded into air curtain burners do not protrude above the air curtain.</p> <p>Verify that only distillate oil, kerosene diesel fuel, natural gas, or liquefied petroleum gas is used to start the fire.</p> <p>Verify that the location of the burning is at least 500 feet from any dwelling, group of dwellings, or commercial or institutional establishment, or other occupied structure not located on the property on which the burning is conducted.</p> <p>(NOTE: The regional office supervisor may grant exceptions to the setback requirements.)</p> <p>(NOTE: Moved from AE.130.4.NC., March 2006.)</p> <p>Verify that, at a permanent site, a daily log of specific materials burned and of amounts of materials burned in lb per h and tons per yr is maintained.</p> <p>Verify that the logs at a permanent air curtain burner site are maintained on site for a minimum of 2 years.</p> <p>Verify that, at a temporary site, a log of the total number of tons burned is maintained.</p> <p>(NOTE: Additionally, the owner or operator of air curtain burner subject to:</p> <ul style="list-style-type: none"> - 40 CFR 60.2245 through 60.2265 shall comply with the monitoring, recordkeeping, and reporting requirements in 40 CFR 60.2245 through

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	60.2265 - 40 CFR 60.2810 through 60.2870 shall comply with the monitoring, recordkeeping, and reporting requirements in 40 CFR 60.2810 through 60.2870 - 40 CFR 60.2970 through 60.2975 shall comply with the monitoring, recordkeeping, and reporting requirements in 40 CFR 60.2970 through 60.2975 - 40 CFR 60.3062 through 60.3069 shall comply with comply with the monitoring, recordkeeping, and reporting requirements in 40 CFR 60.3062 through 60.3069.)

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<p>AE.26.</p> <p>EXISTING COMMERCIAL AND INDUSTRIAL SOLID WASTE INCINERATORS (CISWI)</p> <p>AE.26.1.NC. Specific commercial and industrial solid waste incinerators (CISWI) must be in compliance (15A NCAC 2D.1210 (a), (b), (c) (d), and (m)) [Added March 2003; Citation Revised March 2007].</p>	<p>(NOTE: Moved from AE.25.9.NC.)</p> <p>Verify that the owner/operator of a CISWI unit submits a waste management plan that identifies in writing the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.</p> <p>Verify that the waste management plan is submitted to the Director before 1 December 2003.</p> <p>(NOTE: The following commercial and industrial solid waste incinerators are exempt from CISWI requirements:</p> <ul style="list-style-type: none"> - incineration units covered under Rules .1203 through .1206 of this Section - units, burning 90 percent or more by weight on a calendar-quarter basis, excluding the weight of auxiliary fuel and combustion air, of agricultural waste, pathological waste, low-level radioactive waste, or chemotherapeutic waste, if the owner or operator of the unit: <ul style="list-style-type: none"> - notifies the Director that the unit qualifies for this exemption - keeps records on a calendar-quarter basis of the weight of agricultural waste, pathological waste, low level radioactive waste, or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit - small power production or cogeneration units if: <ul style="list-style-type: none"> - the unit qualifies as a small power-production facility under Section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)) or as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)) - the unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity - the owner or operator of the unit notifies the Director that the unit qualifies for this exemption - units that combust waste for the primary purpose of recovering metals - cyclonic barrel burners - rack, part, and drum reclamation units that burn the coatings off racks used to hold small items for application of a coating - cement kilns - chemical recovery units burning materials to recover chemical constituents or to produce chemical compounds as listed in 40 CFR 60.2555(n)(1) through (7)

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AE.26.2.NC. Commercial and industrial solid waste incinerators (CISWI) must meet compliance schedules (15A NCAC 2D.1210 (n)) [Added March 2003; Citation Revised March 2006].	<ul style="list-style-type: none"> - laboratory analysis units that burn samples of materials for the purpose of chemical or physical analysis - air curtain burners covered under Rule .1904 of this Subchapter. <p>(NOTE: The owner or operator of a chemical recovery unit not listed under 40 CFR 60.2555(n) may petition the Director to be exempted. The petition shall include all the information specified under 40 CFR 60.2559(a). The Director will approve the exemption if he finds that all the requirements of 40 CFR 60.2555(n) are satisfied and that the unit burns materials to recover chemical constituents or to produce chemical compounds where there is an existing market for such recovered chemical constituents or compounds.)</p> <p>(NOTE: The definitions contained in 40 CFR 60.2875 shall apply in addition to the definitions in Rule .1202 of this Section.)</p>
	<p>(NOTE: Moved from AE.25.10.NC.)</p> <p>(NOTE: See AE.26.1.NC. for applicability and exemptions.)</p> <p>Verify that the owner/operator who plans to achieve compliance after 30 November 2003, submits the final control plan before 1 December 2003, along with the permit application.</p> <p>Verify that the final compliance will be achieved no later than 1 December 2005.</p> <p>(NOTE: The final control plan must contain the information specified in 40 CFR 60.2600(a)(1) through (5).)</p> <p>Verify that a copy of the final control plan is maintained on site.</p> <p>Verify that the Director is notified within 5 days after the CISWI unit is to be in final compliance whether the final compliance have been achieved.</p> <p>(NOTE: The final compliance is achieved by completing all process changes and retrofitting construction of control devices, as specified in the final control plan, so that, if the affected CISWI unit is brought on line, all necessary process changes and air pollution control devices would operate as designed.)</p> <p>Verify that, if final compliance has not been achieved, a notification is submitted informing the Director that the final compliance has not been met and submit reports each subsequent calendar month until the final compliance is achieved.</p> <p>(NOTE: If owner or operator of the CISWI unit, closes the CISWI unit and restarts it:</p> <ul style="list-style-type: none"> - before December 1, 2005, he submit along with the permit application,

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AE.26.3.NC. Commercial and industrial solid waste incinerators (CISWI) must meet emission standards (15A NCAC 2D.1210 (e)) [Added March 2003].	<p>the final control plan for the CISWI unit, and the final compliance is achieved by 1 December 2005</p> <ul style="list-style-type: none"> - after 1 December 2005, emission control retrofits are completed and the emission limitations and operating limits are met on the date the CISWI unit restarts operation.) <p>Verify that, if the CISWI unit will be closed, a closure notification including the date of closure is submitted to the Director by 1 December 2003, and operation is ceased by 1 December 2005.</p> <p>(NOTE: Moved from AE.25.11.NC.)</p> <p>(NOTE: See AE.26.1.NC. for applicability and exemptions.)</p> <p>(NOTE: These emission standards apply except where Rules .0524, .1110, or .1111 of this Subchapter applies. When Subparagraphs (12) or (13) and Rules .0524, .1110, or .1111 of this Subchapter regulate the same pollutant, the more restrictive provision for each pollutant will apply, notwithstanding provisions of Rules .0524, .1110, or .1111 to the contrary.)</p> <p>(NOTE: The emission rates computed or used that demonstrate compliance with the ambient standards will be specified as a permit condition for the facility with incinerators as their allowable emission limits.)</p> <p>Verify that emissions of particulate matter from a CISWI unit do not exceed 70 milligrams per dry standard cubic meter corrected to 7 percent oxygen (dry basis).</p> <p>Verify that visible emissions from the stack of a CISWI unit do not exceed 10 percent opacity (6-minute block average).</p> <p>Verify that emissions of sulfur dioxide from a CISWI unit do not exceed 20 parts per million by volume corrected to 7 percent oxygen (dry basis).</p> <p>Verify that emissions of nitrogen oxides from a CISWI unit do not exceed 368 parts per million by volume corrected to 7 percent oxygen (dry basis).</p> <p>Verify that emissions of carbon monoxide from a CIWI unit do not exceed 157 parts per million by volume, corrected to 7 percent oxygen (dry basis).</p> <p>Verify that control of odorous emissions meets the requirements of .1806 (see AE.5.1.NC.)</p> <p>Verify that emissions of hydrogen chloride from a CISWI unit do not exceed 62 parts per million by volume, corrected to 7 percent oxygen (dry basis).</p> <p>Verify that emissions of mercury from a CISWI unit do not exceed 0.47</p>

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AE.26.4.NC. Commercial and industrial solid waste incinerators (CISWI) must meet operational requirements (15A NCAC 2D.1210 (f)) [Added March 2003].	<p>milligrams per dry standard cubic meter, corrected to 7 percent oxygen.</p> <p>Verify that emissions of lead from a CISWI unit do not exceed 0.04 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.</p> <p>Verify that emissions of cadmium from a CISWI unit do not exceed 0.004 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.</p> <p>Verify that emissions of dioxins and furans from a CISWI unit do not exceed 0.41 nanograms per dry standard cubic meter (toxic equivalency basis), corrected to 7 percent oxygen.</p> <p>(NOTE: Toxic equivalency is given in Table 4 of 40 CFR part 60, Subpart DDDD.)</p> <p>Verify that control of toxic air pollutants can be demonstrated (2Q.0700).</p> <p>Verify that, in addition to the ambient air quality standards in Section .0400 (see Appendix 1-13, the following ambient air quality standards, which are an annual average, in milligrams per cubic meter at 77°F (25°C) and 29.92 inches (760 mm) of mercury pressure and which are increments above background concentrations, are applied aggregately to all incinerators:</p> <ul style="list-style-type: none"> - arsenic and its compounds 2.3×10^{-7} - beryllium and its compounds 4.1×10^{-6} - cadmium and its compounds 5.5×10^{-6} - chromium (VI) and its compounds 8.3×10^{-8}. <p>(NOTE: The owner or operator of a facility with incinerators must demonstrate compliance with the ambient standards by following the procedures set out in Rule .1106 of this Subchapter. Modeling demonstrations must comply with the requirements of Rule .0533 of this Subchapter.)</p>
	<p>(NOTE: Moved from AE.25.12.NC.)</p> <p>(NOTE: See AE.26.1.NC. for applicability and exemptions.)</p> <p>Verify that the operating limits established in the initial performance test are met.</p> <p>Verify that, if a fabric filter is used to comply with the emission limitations, it is operated as specified in 40 CFR 60.2675(c).</p> <p>(NOTE: If an air pollution control device other than a wet scrubber is used or if emissions are limited in some other manner to comply with the emission standards, the owner or operator must petition the Director for specific operating limits that will be established during the initial performance test and</p>

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<p>AE.26.5.NC. Commercial and industrial solid waste incinerators (CISWI) must meet monitoring requirements (15A NCAC 2D.1210 (h)) [Added March 2003].</p>	<p>continuously monitored thereafter. The initial performance test must not be conducted until after the Director approves the petition.)</p> <p>(NOTE: Moved from AE.25.13.NC.)</p> <p>(NOTE: See AE.26.1.NC. for applicability and exemptions.)</p> <p>Verify that the monitoring, recordkeeping, and reporting requirements in Section .0600 (see AE.7.3.NC. through AE.7.8.NC.) are met.</p> <p>Verify that the following are established, installed and calibrated, maintained, and operated to manufacturers specifications:</p> <ul style="list-style-type: none"> - devices or methods for continuous temperature monitoring and recording for the primary chamber and, where there is a secondary chamber, for the secondary chamber - devices or methods for monitoring the value of the operating parameters used to determine compliance with the operating parameters - a bag leak detection system that meets the requirements of 40 CFR 60.2730(b) if a fabric filter is used to comply with the requirements of the emission standards - equipment necessary to monitor compliance with the cite-specific operating parameters. <p>(NOTE: The Director will require the owner or operator of a CISWI unit with a permitted charge rate of 750 pounds per hour or more to install, operate, and maintain continuous monitors for oxygen or for carbon monoxide or both as necessary to determine proper operation of the CISWI unit.)</p> <p>(NOTE: The Director may require the owner or operator of a CISWI unit with a permitted charge rate of 750 pounds per hour or less to install, operate, and maintain continuous monitors for oxygen or for carbon monoxide or both as necessary to determine proper operation of the CISWI unit.)</p> <p>Verify that monitoring is conducted at all times the CISWI unit is operating, except:</p> <ul style="list-style-type: none"> - malfunctions and associated repairs - required quality assurance or quality control activities including calibrations checks and required zero and span adjustments of the monitoring system.
<p>AE.26.6.NC. Commercial and industrial solid waste incinerators (CISWI) must meet recordkeeping and reporting</p>	<p>(NOTE: Moved from AE.25.14.NC.)</p> <p>(NOTE: See AE.26.1.NC. for applicability and exemptions.)</p>

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requirements (15A NCAC 2D.1210 (i)) [Added March 2003].		<p>Verify that required records are maintained on site in either paper copy or electronic format that can be printed upon request for a period of at least 5 years.</p> <p>Verify that all records required under 40 CFR 60.2740 are maintained.</p> <p>Verify that the following reports specified in Table 5 of 40 CFR 60, Subpart DDDD are submitted</p> <ul style="list-style-type: none"> - Waste Management Plan - initial test report, as specified in 40 CFR 60.2760 - annual report as specified in 40 CFR 60.2770 - emission limitation or operating limit deviation report as specified in 40 CFR 60.2780 - qualified operator deviation notification as specified in 40 CFR 60.2785(a)(1) - qualified operator deviation status report, as specified in 40 CFR 60.2785(a)(2) - qualified operator deviation notification of resuming operation as specified in 40 CFR 60.2785(b). <p>Verify that a deviation report is submitted if:</p> <ul style="list-style-type: none"> - any recorded three-hour average parameter level is above the maximum operating limit or below the minimum operating limit - the bag leak detection system alarm sounds for more than 5 percent of the operating time for the six-month reporting period - a performance test was conducted that deviated from any emission standards. <p>Verify that the deviation report is submitted by 1 August of the year for data collected during the first half of the calendar year (1 January to 30 June), and by 1 February of the following year for data collected during the second half of the calendar year (1 July to 31 December).</p> <p>(NOTE: The owner or operator of the CISWI unit may request changing semiannual or annual reporting dates.)</p> <p>Verify that required reports are submitted electronically or in paper format, postmarked on or before the submittal due dates.</p> <p>(NOTE: If the CISWI unit has been shut down by the Director, due to failure to provide an accessible qualified operator, the owner or operator shall notify the Director that the operations are resumed once a qualified operator is accessible.)</p>
AE.26.7.NC. Commercial and industrial waste		(NOTE: Moved from AE.25.15.NC.)

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<p>incinerators (CISWI) must meet excess emission requirements (15A NCAC 2D.1210 (j)) [Added March 2003].</p> <p>AE.26.8.NC. Commercial and industrial solid waste incinerators (CISWI) must meet operator training requirements (15A NCAC 2D.1210 (k)) [Added March 2003].</p> <p>AE.26.9.NC. Commercial and industrial solid waste incinerators (CISWI) must not incinerate prohibited wastes (15A NCAC 2D.1210 (l)) [Added March 2006].</p>	<p>(NOTE: See AE.26.1.NC. for applicability and exemptions.)</p> <p>Verify that all CISWI units comply with Rule .0535, Excess Emissions Reporting and Malfunctions (see AE.7.2.NC.).)</p> <p>(NOTE: Moved from AE.25.16.NC.)</p> <p>Verify that, when a CISWI unit is operated, a fully trained and qualified CISWI unit operator is accessible at all times, either at the facility or available within one hour.</p> <p>(NOTE: The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more CISWI unit operators.)</p> <p>Verify that operator training and qualification are obtained by completing the requirements of 40 CFR 60.2635(c) by the later of:</p> <ul style="list-style-type: none"> - 1 December 2005 - 6 month after CISWI unit startup - 6 month after an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit. <p>Verify that operator qualification is maintained by completing an annual review or refresher course.</p> <p>Verify that the owner or operator of a CISIW does not incinerate any of the following wastes:</p> <ul style="list-style-type: none"> - antifreeze (ethylene glycol) used solely in motor vehicles - aluminum cans - white goods - lead-acid batteries.

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<p>MEDICAL WASTE INCINERATORS</p> <p>AE.30. General</p> <p>AE.30.1.NC. A hospital, medical, or infectious waste incinerator (HMIWI) must meet specific emissions requirements (15A NCAC 2D.1206 (c)) [Revised March 2001; Revised March 2003; Revised March 2008].</p>	<p>(NOTE: When these requirements and Rule .0524 (New Source Performance Standards), .1110 (National Emission Standards for Hazardous Air Pollutants), or .1111 (Maximum Achievable Control Technology) regulate the same pollutant, the more restrictive provision for each pollutant shall apply.)</p> <p>Verify that the emission standards in Appendix 1-15 are met.</p> <p>(NOTE: If an incinerator can be defined as being more than one type of incinerator, the following order is used to determine which standards and requirements to apply:</p> <ul style="list-style-type: none"> - hazardous waste incinerators - sewage sludge incinerators - sludge incinerators - municipal waste combustors - commercial and industrial solid waste incinerators - hospital, medical or infectious waste incinerators (HMIWIs) - other solid waste incinerators - conical incinerators - crematory incinerators <p>- other incinerators.) [Revised March 2001; Revised March 2006].</p> <p>(NOTE: Hospital, medical and infectious waste incinerator (HMIWI) means any device that combusts any amount of hospital, medical and infectious waste in which construction was commenced on or before June 20, 1996. 15A NCAC 2D.1206 applies to any hospital, medical, and infectious waste incinerator (HMIWI), except:</p> <ul style="list-style-type: none"> - any HMIWI required to have a permit under Section 3005 of the Solid Waste Disposal Act - any pyrolysis unit - any cement kiln firing hospital waste or medical and infectious waste - any physical or operational change made to an existing HMIWI solely for the purpose of complying with the emission standards for HMIWIs in this Rule. These physical or operational changes are not considered a modification and do not result in an existing HMIWI becoming subject to the provisions of 40 CFR Part 60, Subpart Ec <p>-any HMIWI during periods when only pathological waste, low-level radioactive waste, or chemotherapeutic waste is burned, provided that the owner or operator of the HMIWI:</p> <ul style="list-style-type: none"> - notifies the Director of an exemption claim - keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, or

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<p>AE.30.2.NC. HMIWI must meet specific operational requirements (15A NCAC 2D.1206(d)).</p>	<p>chemotherapeutic waste is burned</p> <ul style="list-style-type: none"> - any co-fired HMIWI, if the owner or operator of the co-fired HMIWI: <ul style="list-style-type: none"> - notifies the Director of an exemption claim - provides an estimate of the relative weight of hospital, medical and infectious waste, and other fuels or wastes to be combusted - keeps records on a calendar quarter basis of the weight of hospital, medical and infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired HMIWI.) <p>(NOTE: See applicability notes in AE.30.1.NC.)</p> <p>Verify that small remote HMIWI had an initial equipment inspection by July 1, 2000, and an annual inspection each yr thereafter.</p> <p>Verify that, at a minimum, the inspection includes all the elements listed in 40) CFR 60.36e(a)(1)(i) through (xvii).</p> <p>Verify that any necessary repairs found during the inspection are completed within 10 operating days of the inspection unless the owner or operator submits a written request to the Director for an extension of the 10 operating day period.</p> <p>Verify that the owner or operator of any HMIWI, except small remote HMIWI, complies with the compliance and performance testing requirements of 40 CFR 60.56c, excluding the fugitive emissions testing requirements under 40 CFR 60.56c(b)(12) and (c)(3).</p> <p>Verify that the owner or operator of any small remote HMIWI complies with the following compliance and performance testing requirements:</p> <ul style="list-style-type: none"> - conduct the performance testing requirements in 40 CFR 60.56c(a), (b)(1) through (b)(9), (b)(11) mercury only), and (c)(1). The 2,000 pound per week limitation does not apply during performance tests - establish maximum charge rate and minimum secondary chamber temperature as site-specific operating parameters during the initial performance test to determine compliance with applicable emission limits - following the date on which the initial performance test is completed, ensure that the HMIWI does not operate above the maximum charge rate or below the minimum secondary chamber temperature measured as 3 h rolling averages, calculated each hour as the average of all previous 3 operating hours, at all times except during periods of start-up, shut-down and malfunction. <p>(NOTE: The 2,000 lb per wk limitation does not apply during performance testing. Operating parameter limits do not apply during performance tests. Operation above the maximum charge rate or below the minimum secondary chamber temperature shall constitute a violation of the established operating</p>

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<p>AE.30.3.NC. A HMIWI must meet operator-training requirements (15A NCAC 2D.1206(h)) [Added March 2001].</p>	<p>parameters.)</p> <p>(NOTE: Operation of the HMIWI above the maximum charge rate and below the minimum secondary temperature, each measured on a 3 h rolling average, simultaneously constitutes a violation of the particulate matter, carbon monoxide, and dioxin and furan emission limits.)</p> <p>(NOTE: The owner or operator of a HMIWI may conduct a repeat performance test within 30 days of violation of applicable operating parameters to demonstrate that the HMIWI is not in violation of the applicable emission limits. Repeat performance tests conducted pursuant to this Subparagraph shall be conducted using the identical operating parameters that indicated a violation under Subparagraph (4) of this Paragraph.)</p> <p>(NOTE: See applicability notes in AE.30.1.NC.)</p> <p>Verify that a HMIWI does not operate at any time unless a fully trained and qualified HMIWI operator is accessible, either at the facility or available within one h.</p> <p>(NOTE: The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.)</p> <p>(NOTE: Operator training and qualification will be obtained by completing the requirements of 40 CFR 60.53c(c) through (g). The owner or operator of a HMIWI must maintain, at the facility, all items required by 40 CFR 60.53c (h) (1) through (h) (10).)</p> <p>Verify that the owner or operator of a HMIWI establishes a program for reviewing the operational documentation required annually with each HMIWI operator.</p> <p>Verify that operational documentation is kept in a readily accessible location for all HMIWI operators.</p>
<p>AE.30.4.NC. A HMIWI must have a permit (15A NCAC 2D.1206 (i)) [Added March 2001].</p>	<p>(NOTE: See applicability notes in AE.30.1.NC.)</p> <p>Verify the HMIWI has submitted an application for a Title V permit by January 1, 2000.</p> <p>Verify that the HMIWI and was in compliance with this 2D.1206 or closed on or before July 1, 2000.</p> <p>Verify that any HMIWI planning to install the necessary air pollution control equipment to comply with the emission standards is in compliance with the</p>

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	<p>emission standards by September 15, 2002.</p> <p>Verify that, if this air pollution control equipment is installed, the owner or operator of the HMIWI meets the measurable and enforceable incremental steps of progress towards compliance that were submitted to the Director.</p>

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<p>MEDICAL WASTE INCINERATORS</p> <p>AE.32. Monitoring</p> <p>AE.32.1.NC. A hospital, medical, or infectious waste incinerator (HMIWI) must meet specific monitoring requirements (15A NCAC 2D.1206 (f) (2) and (6)) [Added March 2001; Citation Revised March 2009].</p> <p>AE.32.2.NC. A small remote HMIWI must meet specific monitoring requirements (15A NCAC 2D.1206 (f) (7)) [Added March 2001].</p>	<p>(NOTE: See applicability notes in AE.30.1.NC.)</p> <p>Verify that the owner or operator of an HMIWI maintains and operates a continuous temperature monitoring and recording device for the primary chamber and, where there is a secondary chamber, for the secondary chamber.</p> <p>Verify that the owner or operator of an HMIWI that has installed air pollution abatement equipment to reduce emissions of hydrogen chloride installs, operates, and maintains continuous monitoring equipment to measure pH for wet scrubber systems and rate of alkaline injection for dry scrubber systems.</p> <p>(NOTE: The Director will require the owner or operator of an incinerator with a permitted charge rate of 750 lb per h or more to install, operate, and maintain continuous monitors for oxygen or for carbon monoxide or both as necessary to determine proper operation of the incinerator. The Director may require the owner or operator of an incinerator with a permitted charge rate of less than 750 lb per h to install, operate, and maintain monitors for oxygen or for carbon monoxide or both as necessary to determine proper operation of the incinerator.)</p> <p>Verify that the owner or operator of any HMIWI complies with the monitoring requirements in 40 CFR 60.57c.</p> <p>Verify that the owner or operator of any small remote HMIWI installs, calibrates, maintains, and operates a device for measuring and recording the temperature of the secondary chamber on a continuous basis, the output of which will be recorded, at a minimum, once every minute throughout operation.</p> <p>Verify that the owner or operator of any small remote HMIWI installs, calibrates, maintains, and operates a device that automatically measures and records the date, time, and weight of each charge fed into the HMIWI.</p> <p>Verify that monitoring data is obtained at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair.</p> <p>Verify that, at a minimum, valid monitoring data is obtained for 75 percent of the operating hours per day and for 90 percent of the operating h per calendar</p>

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	quarter that the HMIWI is combusting hospital, medical, and infectious.

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<p>MEDICAL WASTE INCINERATORS</p> <p>AE.34. Reporting/ Recordkeeping Requirements</p> <p>AE.34.1.NC. A HMIWI must meet recordkeeping and reporting requirements (15A NCAC 2D.1206 (f) (3)) [Added March 2001].</p> <p>AE.34.2.NC. A small, remote HMIWI must meet recordkeeping and reporting requirements (15A NCAC 2D.1206 (f) (4) and (5)) [Added March 2001].</p>	<p>(NOTE: See applicability notes in AE.30.1.NC.)</p> <p>(NOTE: The owner or operator of an incinerator must comply with the monitoring, recordkeeping, and reporting requirements in Section .0600 (see AE.7.3.NC. through AE.7.8.NC.).)</p> <p>Verify that the owner or operator of a HMIWI complies with the reporting and recordkeeping requirements listed in 40 CFR 60.58c (b), (c), (d), (e), and (f), excluding 40 CFR 60.58c (b) (2) (ii) and (b) (7).</p> <p>Verify that a small remote HMIWI maintains records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days of an inspection.</p> <p>Verify that a small remote HMIWI submit an annual report containing information recorded above to the Director no later than 60 days following the yr in which data were collected.</p> <p>Verify that subsequent annual reports are sent no later than 12 calendar mo following the previous report.</p> <p>Verify that required reports are submitted to the Director semiannually once the HMIWI is subject to the permitting procedures of 15A NCAC 2Q.0500, Title V Procedures.</p> <p>Verify that the owner or operator of a HMIWI complies with the requirements of 40 CFR 60.55c for the preparation and submittal of a waste management plan.</p>

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<p>AE.40.</p> <p>MUNICIPAL SOLID WASTE INCINERATORS</p> <p>AE.40.1.NC. A municipal solid waste combustor must meet specific emissions requirements for particulate matter, visible emissions, and fugitive ash (15A NCAC 2D.1201(d) and 2D.1205 (c) (2), (3), and (12)) [Revised March 2001; Revised March 2003; Revised March 2005].</p> <p>AE.40.2.NC. A municipal solid waste combustor must meet specific operational requirements (15A NCAC</p>	<p>(NOTE: These requirements apply to both Class I and large municipal waste combustors.)</p> <p>Verify that emissions of particulate matter from each municipal waste combustor do not exceed 27 mg per dry standard cubic meter, corrected to seven percent oxygen.</p> <p>Verify that the emission limit for opacity from any municipal waste combustor does not exceed 10 percent (average of 30 6-minute average).</p> <p>Verify that, on or after the date on which the initial performance test is completed, no owner or operator of a municipal waste combustor discharges to the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., nine minutes per block three-h period (determined by EPA Reference Method 22 observations as specified in 40 CFR 60.58b (k)).</p> <p>(NOTE: The emission limit specified above covers visible emissions discharged to the atmosphere from buildings or enclosures, not the visible emissions discharged inside of the building or enclosures, of ash conveying systems. It does not apply during maintenance and repair of ash conveying systems.)</p> <p>(NOTE: If an incinerator can be defined as being more than one type of incinerator, the following order is used to determine which standards and requirements to apply:</p> <ul style="list-style-type: none"> - hazardous waste incinerators - sewage sludge incinerators - sludge incinerators - municipal waste combustors - commercial and industrial solid waste incinerators - hospital, medical or infectious waste incinerators (HMIWIs) - other solid waste incinerators - conical incinerators - crematory incinerators - other incinerators.) [Revised March 2001; Revised March 2006]. <p>(NOTE: See AE.40.1.NC for applicability.)</p> <p>(NOTE: These operational standards do not apply when applicable operational standards in .0524 (New Source Performance Standards), .1110</p>

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2D.1205 (d) and (g)) [Revised March 2001; Revised March 2003; Revised March 2005].	<p>(National Emission Standards for Hazardous Air Pollutants), or .1111 (Maximum Achievable Control Technology) apply.)</p> <p>Verify that the concentration of carbon monoxide at the combustor outlet does not exceed the concentration in Table 3 of 40 CFR 60.34b (a) for large municipal waste combustors and table 3 of 40 CFR 60 Subpart BBBB.</p> <p>Verify that the load level does not exceed 110 percent of the maximum demonstrated municipal waste combustor unit load (4 –hr block average).</p> <p>Verify that the combustor operating temperature, measured at the particulate matter control device inlet, does not exceed 63 deg F above the maximum demonstrated particulate matter control device temperature (4-hr block average).</p> <p>Verify that a municipal waste combustor with activated carbon control system to control dioxins and furans or mercury emissions maintains an eight-hour block average carbon feed rate at or above the highest average level established during the most recent dioxins and furans or mercury test and evaluates total carbon usage for each calendar quarter.</p> <p>Verify that the amount of carbon purchased and delivered to the municipal waste combustor is at or above the required quarterly usage of carbon and is calculated as specified in equation 4 or 5 in 40 CFR 60.1935(f).</p> <p>(NOTE: Municipal waste combustor are exempted from limits on load level, temperature at the inlet of the particular matter control device, and carbon feed rate during:</p> <ul style="list-style-type: none"> - the annual tests for dioxins and furans - the annual mercury tests for carbon feed requirements only - the 2 weeks preceding the annual tests for dioxins and furans - the 2 weeks preceding the annual mercury tests for carbon feed rate requirements only - any activities to improve the performance of the municipal waste combustor or its emission control including performance evaluations and diagnostic or new technology testing.) <p>Verify that, except during start-up, waste material is not loaded into any incinerator when the temperature is below the minimum required temperature.</p> <p>Verify that incinerators have automatic auxiliary burners that are capable of maintaining the required minimum temperature in the secondary chamber excluding the heat content of the wastes.</p> <p>Verify that all municipal waste combustors comply with Rule .0535, Excess Emissions Reporting and Malfunctions (see AE.7.2.NC.).)</p> <p>(NOTE: The operational standards apply at all times except during periods of municipal waste combustor startup, shutdown, or malfunction that last no</p>

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<p>AE.40.3.NC. A municipal solid waste combustor must meet specific emission standards (15A NCAC 2D.1205(c) (4) through (11) and (13) and (14)) [Added March 2001; Revised March 2003; Revised March 2005].</p>	<p>more than:</p> <ul style="list-style-type: none"> - 3 hours for Class I combustors - 3 hours except as specified in 40 CFR 60.58b9 (a) (1) (iii) for large municipal waste combustors.) <p>(NOTE: See AE.40.1.NC for applicability.)</p> <p>Verify that emissions of sulfur dioxide from each Class I municipal waste combustor is reduced by at least 75 percent by weight or volume or to more than 31 parts per million by volume corrected to seven percent oxygen (dry basis), whichever is less stringent (based on a 24-h daily geometric mean).</p> <p>Verify that emissions of sulfur dioxide from each large municipal waste combustor are reduced by at least 75 percent by weight or volume, or to more than 29 parts per million by volume corrected to seven percent oxygen (dry basis), whichever is less stringent (based on a 24-h daily geometric mean).</p> <p>Verify that emissions of nitrogen oxide from each class I municipal waste combustor do not exceed the emission limits in Table 3 40 CFR 60, Subpart BBBB.</p> <p>Verify that emissions of nitrogen oxide from each large municipal waste combustor do not exceed the emission limits in Table 1 of Paragraph (d) of 40 CFR 60.33b.</p> <p>Verify that emissions of nitrogen oxide from fluidized bed combustors located at a large municipal waste combustor does not exceed 180 parts per million by volume, corrected to seven percent oxygen, by August 1, 2002.</p> <p>Verify that, if nitrogen oxide emissions averaging is used as specified in 40 CFR 60.33b(d)(1)(i) through (d)(1)(V), emissions of nitrogen oxide from fluidized bed combustors located at a large municipal waste combustor does not exceed 165 parts per million by volume, corrected to seven percent oxygen, by August 1, 2002.</p> <p>Verify that control of odorous emissions meets the requirements of f.0522 (see AE.5.1.NC.)</p> <p>Verify that emissions of hydrogen chloride from each class I municipal waste combustor is reduced by at least 95 percent by weight or volume of potential hydrogen chloride emissions or to no more than 31 parts per million by volume corrected to seven percent oxygen (dry basis), whichever is less stringent (determined by averaging emissions over a one-hour period).</p> <p>Verify that emissions of hydrogen chloride from each large municipal waste combustor is reduced by at least 95 percent by weight or volume of potential hydrogen chloride emissions or no more than 29 parts per million by volume, corrected to seven percent oxygen (dry basis), whichever is less stringent</p>

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	<p>(determined by averaging emissions over a one-h period).</p> <p>Verify that emissions of mercury from each municipal waste combustor is reduced by at least 85 percent by weight of potential mercury emissions or does not exceed 0.08 milligrams per dry standard cubic meter, corrected to seven percent oxygen, whichever is less stringent (determined by averaging emissions over a one-h period).</p> <p>Verify that emissions of lead from each class I municipal waste combustor does not exceed 0.49 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.</p> <p>Verify that emissions of lead from each large municipal waste combustor do not exceed 0.44 milligrams per dry standard cubic meter, corrected to seven percent oxygen.</p> <p>Verify that emissions of cadmium from each municipal waste combustor do not exceed 0.040 milligrams per dry standard cubic meter, corrected to seven percent oxygen.</p> <p>Verify that emissions of dioxins and furans from each large municipal waste combustor does not exceed.</p> <ul style="list-style-type: none"> - 60 nanograms per dry standard cubic meter (total mass) corrected to seven percent oxygen for facilities that employ an electrostatic precipitator-based emission control system, or - 30 nanograms per dry standard cubic meter (total mass) corrected to seven percent oxygen for facilities that do not employ an electrostatic precipitator-based emission control system. <p>Verify that control of toxic air pollutants can be demonstrated (2Q.0700.)</p> <p>Verify that, in addition to the ambient air quality standards in Section .0400 (see Appendix 1-13, the following ambient air quality standards, which are an annual average, in milligrams per cubic meter at 77 deg F (25 deg C) and 29.92 inches (760 mm) of mercury pressure and which are increments above background concentrations, are applied aggregately to all incinerators:</p> <ul style="list-style-type: none"> - arsenic and its compounds 2.3×10^{-7} - beryllium and its compounds 4.1×10^{-6} - cadmium and its compounds 5.5×10^{-6} - chromium (VI) and its compounds 8.3×10^{-8}. <p>(NOTE: The owner or operator of a facility with incinerators must demonstrate compliance with the ambient standards by following the procedures set out in Rule .1106 of this Subchapter. Modeling demonstrations must comply with the requirements of Rule .0533 of this Subchapter.)</p>

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<p>AE.40.4.NC. A municipal solid waste combustor must meet monitoring, recordkeeping, and reporting standards (15A NCAC 2D.1205 (f)) [Added March 2001; Revised March 2005].</p>	<p>(NOTE: See AE.40.1.NC for applicability.)</p> <p>Verify that the owner or operator of an incinerator that has installed air pollution abatement equipment to reduce emissions of hydrogen chloride installs, operates, and maintains continuous monitoring equipment to measure pH for wet scrubber systems and rate of alkaline injection for dry scrubber systems.</p> <p>Verify that the owner or operator of a municipal waste combustor installs, operates, and maintains, for each municipal waste combustor, continuous emission monitors to determine the following:</p> <ul style="list-style-type: none"> - opacity according to 40 CFR 60.58b(c) for large municipal waste combustors and 40 CFR 60.1720 for class I municipal waste combustors - sulfur dioxide according to 40 CFR 60.58b(e) for large municipal waste combustors and 40 CFR 60.1720 for class I municipal waste combustors - nitrogen dioxide according to 40 CFR 60.58b(h) for large municipal waste combustors and 40 CFR 60.1720 for class I municipal waste combustors - oxygen (or carbon dioxide) according to 40 CFR 60.58b(b) for large municipal waste combustors and 40 CFR 60.1720 for class I municipal waste combustors - temperature level in the primary chamber and, where there is a secondary chamber, in the secondary chamber. <p>Verify that class I municipal waste combustors monitor load level of each according to 40 CFR 60.1810.</p> <p>Verify that the owner or operator of a municipal waste combustor monitors temperature of the gases flue at the inlet of the particulate matter air pollution control device according to 40 CFR 60.1815 and the carbon feed rate if activated carbon is used to abate dioxins and furans or mercury emissions according to 40 CFR 60.1820.</p> <p>Verify that records of the information listed in 40 CFR 60.59b (d) (1) through (d) (15) for large municipal waste combustors and in 40 CFR 60.1840 through 1855 for class I municipal waste combustors are maintained for a period of at least 5 yr.</p> <p>Verify that following the initial compliance tests, the information specified in 40 CFR 60.59b (f) (1) through (f) (6) for large municipal waste combustors and in 40 CFR 60.1875 for class I municipal waste combustors, is submitted in the initial performance test report.</p> <p>Verify that, following the first yr of municipal combustor operation, an annual report is submitted including the information specified in 40 CFR 60.59b (g) (1) through (g) (4) for large municipal waste combustors and in 40 CFR 60.1885 for class I municipal waste combustors, as applicable, no later</p>

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<p>AE.40.5.NC. A municipal solid waste combustor must meet operator training and certification requirements (15A NCAC 2D.1205 (h)) [Added March 2001; Revised March 2005].</p>	<p>than February 1 of each yr following the calendar yr in which the data were collected.</p> <p>(NOTE: Once the unit is subject to permitting requirements under 15A NCAC 2Q.0500, Title V Procedures, the owner or operator of an affected facility must submit these reports semiannually.)</p> <p>Verify that a semiannual report that includes information specified in 40 CFR 60.59b (h) for large municipal waste combustors and in 40 CFR 60.1900 for class I municipal waste combustors, for any recorded pollutant or parameter that does not comply with the pollutant or parameter limit specified in this Section, is submitted according to the schedule specified in 40 CFR 60.59b (h) (6).</p> <p>(NOTE: See AE.40.1.NC for applicability.)</p> <p>Verify that by 6 mo after the date of start-up of a class I municipal waste or a large municipal waste combustor:</p> <ul style="list-style-type: none"> - each facility operator and shift supervisor of a municipal waste combustor obtains and maintains a current provisional operator certification from the American Society of Mechanical Engineers (ASME QRO-1-1994) - each facility operator and shift supervisor of a municipal waste combustor has completed full certification or has scheduled a full certification exam with the American Society of Mechanical Engineers (ASME QRO-1-1994) - a municipal waste combustor plant is not operated at any time unless one of the following persons is on duty at the affected facility: <ul style="list-style-type: none"> - a fully certified chief facility operator - a provisionally certified chief facility operator who is scheduled to take the full certification - a fully certified shift supervisor - a provisionally certified shift supervisor who is scheduled to take the full certification exam. <p>(NOTE: If one of the certified persons leaves the facility during their operating shift, a provisionally certified control room operator who is onsite at the facility may fulfill the requirements for certified personnel.)</p> <p>Verify that the owner or operator of a municipal waste combustor develops and updates on a yearly basis a site-specific operating manual that at the minimum address the elements of municipal waste combustor unit operation specified in 40 CFR 60.54b(E)(1) through (e)(11).</p> <p>Verify that, by 6 mo after the date of start-up of a municipal waste combustor, all chief facility operators, shift supervisors, and control room operators</p>

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<p>AE.40.6.NC. A municipal solid waste combustor must meet compliance schedules (15A NCAC 2D.1205 (i)) [Added March 2001; Revised March 2003; Revised March 2005].</p>	<p>complete the EPA municipal waste combustor training course.</p> <p>(NOTE: This requirement for the EAP training course is not applicable to chief facility operators, shift supervisors and control room operators who have obtained full certification.)</p> <p>Verify that the owner or operator of a municipal waste combustor establishes annually a training program to review the operating manual, with each person who has responsibilities affecting the operation of an affected facility, including the chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane-load handlers.</p> <p>Verify that the operating manual is kept in a readily accessible location for all persons required to undergo training.</p> <p>Verify that the operating manual and records of training are available for inspection by the personnel of the Division on request.</p> <p>(NOTE: See AE.40.1.NC for applicability.)</p> <p>Verify that the owner or operator of a large municipal waste combustor chooses one of the following 3 compliance schedule options:</p> <ul style="list-style-type: none"> - comply with all the requirements or close before August 1, 2000 - comply with all the requirements before 3 yr following the date of issuance of a revised construction and operation permit, if permit modification is required, or after August 1, 2000, but before August 1, 2002, if a permit modification is not required - close between August 1, 2000, and August 1, 2002. <p>Verify that the owner or operator of a class I municipal waste combustor chooses one of the following 3 compliance schedule options:</p> <ul style="list-style-type: none"> - comply with all the requirements before July 1, 2002 - comply with all the requirements by July 1, 2002 whether a permit modification is required or not - close by July 1, 2002 and then reopen - permanently close the combustor. <p>Verify that class I municipal waste combustors that began construction, modification, or reconstruction after June 26, 1987, but before September 19, 1994, comply with the emission limit for mercury and the emission limit for dioxin and furan (see AE.40.3.NC.) by 1 July 2002.</p> <p>Verify that the owner or operator certifies to the Director within 5 days after the deadline, for each increment of progress, whether the required increment of progress has been met.</p>

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	<p>(NOTE: According to 15A NCAC 2D.1201(d), if an incinerator can be defined as being more than one type of incinerator, the following order is used to determine which standards and requirements to apply:</p> <ul style="list-style-type: none"> - hazardous waste incinerators - sewage sludge incinerators - sludge incinerators - municipal waste combustors - commercial and industrial solid waste incinerators - hospital, medical or infectious waste incinerators (HMIWIs) - other solid waste incinerators - conical incinerators - crematory incinerators - other incinerators.) [Revised March 2001].

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<p>AE.45.</p> <p>SEWAGE SLUDGE INCINERATORS</p> <p>AE.45.1.NC. A sewage sludge incinerator must meet specific operational requirements (15A NCAC 2D.1201(d) and 2D.1204 (d), (e), and (g)) [Revised March 2001; Revised March 2008].</p>	<p>Verify that the maximum combustion temperature and the operational parameters for the sewage sludge incinerator air pollution control device(s) specified in the permit are met.</p> <p>Verify that the monthly average concentration for total hydrocarbons, or carbon monoxide as provided in 40 CFR 503.40(c), in the exit gas from a sewage sludge incinerator stack, corrected to zero percent moisture and seven percent oxygen as specified in 40 CFR 503.44, does not exceed 100 parts per million on a volumetric basis using the continuous emission monitor.</p> <p>Verify that the combustion temperature in a sludge incinerator is not less than 1200°F.</p> <p>Verify that the maximum oxygen content of the exit gas from a sludge incinerator stack is:</p> <ul style="list-style-type: none"> - 12 percent (dry basis) for a multiple hearth sludge incinerator - seven percent (dry basis) for a fluidized bed sludge incinerator - nine percent (dry basis) for an electric sludge incinerator - 12 percent (dry basis) for a rotary kiln sludge incinerator. <p>(NOTE: The test methods and procedures described in Rule .0501 of this Subchapter and in 40 CFR Part 60 Appendix A and 40 CFR Part 61 Appendix B shall be used to determine compliance with emission rates. Method 29 of 40 CFR Part 60 shall be used to determine emission rates for metals. However, Method 29 shall be used to sample for chromium (VI), and SW 846 Method 0060 shall be used for the analysis.)</p> <p>Verify that testing is performed to determine pollutant control efficiencies of any pollution control equipment and obtain information on operational parameters, including combustion temperature, to be specified as a permit condition.</p> <p>(NOTE: All sewage sludge incinerators must comply with Rule .0535, Excess Emissions Reporting and Malfunctions (see AE.7.2.NC.).)</p> <p>(NOTE: If an incinerator can be defined as being more than one type of incinerator, the following order is used to determine which standards and requirements to apply:</p> <ul style="list-style-type: none"> - hazardous waste incinerators - sewage sludge incinerators - sludge incinerators - municipal waste combustors - commercial and industrial solid waste incinerators

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<p>AE.45.2.NC. A sewage sludge incinerator must meet specific monitoring and recordkeeping requirements (15A NCAC 2D.1204 (f)) [Revised March 1998; Revised February 1999; Revised March 2001; Revised March 2003].</p>	<ul style="list-style-type: none"> - hospital, medical or infectious waste incinerators (HMIWIs) - other solid waste incinerators - conical incinerators - crematory incinerators - other incinerators.) <p>(NOTE: The owner or operator of an incinerator subject to the requirements of this Rule must comply with any other applicable monitoring, recordkeeping, and reporting requirements.)</p> <p>Verify that a continuous temperature monitoring and recording device is maintained and operated for the primary chamber and, where there is a secondary chamber, for the secondary chamber.</p> <p>Verify that, where air pollution abatement equipment has been installed to reduce emissions of hydrogen chloride, continuous monitoring equipment is maintained and operated to measure pH for wet scrubber systems and rate of alkaline injection for dry scrubber systems.</p> <p>Verify that, for each incinerator, continuous emission monitors are operated and maintained to determine the following:</p> <ul style="list-style-type: none"> - total hydrocarbon concentration of the incinerator stack exit gas according to 40 CFR 503.45(a) unless the requirements for continuously monitoring carbon monoxide as provided in 40 CFR 503.40(c) are satisfied - oxygen content of the incinerator stack exit gas - moisture content of the incinerator stack exit gas. <p>Verify that the concentration of beryllium and mercury from the sludge fed to the incinerator is monitored at least as frequently as required by Rule .1110 of this Subchapter but in no case less than once per year.</p> <p>Verify that the concentrations of arsenic, cadmium, chromium, lead, and nickel in the sewage sludge fed to the incinerator is monitored at least as frequently as required under 40 CFR 503.46(a)(2) and (3).</p> <p>Verify that mercury emissions are determined by use of Method 101 or 101A of 40 CFR Part 61, Appendix B, where applicable to 40 CFR 61.55(a).</p> <p>Verify that records of all required test methods and are kept according to 40 CFR 503.47.</p> <p>Verify that, for class I sludge management facilities (as defined in 40 CFR 503.9), POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gal per day, and POTWs that serve a population of 10,000 people or greater, submit the mercury emissions to the Director on or before February 19 of each year.</p> <p>(NOTE: According to 15A NCAC 2D.1201(d), if an incinerator can be defined as</p>

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<p>AE.45.3.NC. A sewage sludge incinerator must meet specific emission standards for particulate matter and visible emissions (15A NCAC 2D.1204 (c) (2) and (3)) [Added March 2001].</p>	<p>being more than one type of incinerator, the following order is used to determine which standards and requirements to apply:</p> <ul style="list-style-type: none"> - hazardous waste incinerators - sewage sludge incinerators - sludge incinerators - municipal waste combustors - commercial and industrial solid waste incinerators - hospital, medical or infectious waste incinerators (HMIWIs) - other solid waste incinerators <p>conical incinerators</p> <ul style="list-style-type: none"> - crematory incinerators - other incinerators.) <p>Verify that, for refuse charge rates between 100 and 2000 lb per h, the allowable emissions rate for particulate matter from any stack or chimney of any incinerator subject to this Rule does not exceed the level calculated with the equation $E = 0.002P$, calculated to 2 significant figures, where "E" equals the allowable emission rate for particulate matter in lb per h and "P" equals the refuse charge rate in lb per h.</p> <p>Verify that, for refuse charge rates of 0 to 100 lb per h, the allowable emission rate of 0.2 lb per h is met.</p> <p>Verify that, for refuse charge rates of 2000 lb per h or greater the allowable emission rate of 4.0 lb per h is met.</p> <p>Verify that the owner or operator who chooses to limit particulate emissions from the incinerator to 0.08 grains per dry standard cubic foot corrected to 12 percent carbon dioxide, demonstrates that the particulate ambient air quality standards are not violated.</p> <p>(NOTE: To correct to 12 percent carbon dioxide, the measured concentration of particulate matter is multiplied by 12 and divided by the measured percent carbon dioxide.)</p> <p>(NOTE: Compliance with particulate matter standards is determined by averaging emissions over a block three-h period.)</p> <p>Verify that the incinerator complies with .0521 for the control of visible emissions (see AE.92.NC. and AE.9.3.NC.).</p>
<p>AE.45.4.NC. A sewage sludge incinerator must meet specific emission standards (15A NCAC 2D.1204 (c) (4) through (12)) [Added March</p>	<p>Verify that sewage sludge incinerator meets the following emission standards:</p> <ul style="list-style-type: none"> - 15A NCAC 2D.0522 for the control of odorous emissions (see AE.5.1.NC.) - 15A NCAC 2D.1110 for mercury emissions (see Appendix 1-1) - 15A NCAC 2D.1110 for beryllium emissions (see Appendix 1-1).

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2001].	<p>Verify that the daily concentration of lead in sewage sludge fed to a sewage sludge incinerator meets the requirements specified in 40 CFR 503.43(c).</p> <p>Verify that the daily concentration of arsenic, cadmium, chromium, and nickel in sewage sludge fed to a sewage sludge incinerator meets the requirements specified in 40 CFR 503.43(d).</p> <p>Verify that control of toxic air pollutants can be demonstrated (2Q.0700).</p> <p>Verify that hydrogen chloride emissions are controlled such that they do not exceed 4 lb per h unless they are reduced by at least 90 percent by weight or to no more than 50 parts per million by volume corrected to seven percent oxygen (dry basis).</p> <p>(NOTE: Compliance with hydrogen chloride emissions must be determined by averaging emissions over a one-h period.)</p> <p>Verify that, in addition to the ambient air quality standards in Section .0400 (see Appendix 1-13, the following ambient air quality standards, which are an annual average, in milligrams per cubic meter at 77°F (25°C) and 29.92 inches (760 mm) of mercury pressure and which are increments above background concentrations, are applied aggregately to all incinerators:</p> <ul style="list-style-type: none"> - arsenic and its compounds 2.3×10^{-7} - beryllium and its compounds 4.1×10^{-6} - cadmium and its compounds 5.5×10^{-6} - chromium (VI) and its compounds 8.3×10^{-8}. <p>(NOTE: When these requirements and Rule .0524 (New Source Performance Standards), .1110 (National Emission Standards for Hazardous Air Pollutants), or .1111 (Maximum Achievable Control Technology) regulate the same pollutant, the more restrictive provision for each pollutant shall apply.)</p> <p>(NOTE: The owner or operator of a facility with incinerators must demonstrate compliance with the ambient standards by following the procedures set out in Rule .1106 of this Subchapter. Modeling demonstrations must comply with the requirements of Rule .0533 of this Subchapter.)</p>

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<p>AE.55.</p> <p>GASOLINE/FUELS</p> <p>AE.55.1.NC. Oxygenated fuel must be used in any spark ignition engine, other than aircraft, in specific areas of North Carolina when ambient air quality standards for CO are exceeded (15A NCAC 2D.1302 and 1304).</p>	<p>Determine whether the facility is located in one of the following areas and whether the Director has placed a notice in the North Carolina Register stating that the area is in violation of ambient air quality standards for CO:</p> <ul style="list-style-type: none"> - the Greensboro/Winston-Salem/High Point Metropolitan Statistical Area consisting of Davie, Davidson, Forsyth, Guilford, Randolph, Stokes, and Yadkin Counties - the Charlotte/Gastonia/Rock Hill Metropolitan Statistical Area consisting of Cabarrus, Gaston, Mecklenburg, and Union Counties - the Raleigh/Durham Metropolitan Statistical Area consisting of Durham, Franklin, Orange, and Wake Counties. <p>(NOTE: The requirement to use oxygenated fuel, once placed into effect, lasts for the 4-mo period beginning 1 November and running through the last day of February of the following year.)</p> <p>(NOTE: Gasoline in storage within these counties, prior to 1 November of the yr in which this requirement goes into effect, at a dispensing facility having total gasoline tank capacity of less than 550 gal or a total weekly dispensing rate of less than 550 gal is exempted from the oxygen content requirement, but any gasoline supplied to the facility during that period must comply.)</p> <p>Verify that the gasoline has an oxygen content of not less than 2.7 percent by weight during the required period.</p>

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<p>AE.60.</p> <p>PRINTING PRESSES AND GRAPHIC ARTS</p> <p>AE.60.1.NC. Flexographic printing, packaging rotogravure printing, and publication rotogravure printing operations or machines with both coating units and printing units must meet specific emissions requirements (15A NCAC 2D.0902 and 2D.0936) [Revised March 1998; Revised March 2004; Revised March 2009].</p>	<p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - gasoline service stations or gasoline dispensing facilities regardless of VOC emission levels - sources whose emissions do not exceed 800 pounds of volatile organic compounds per calendar month and that are: <ul style="list-style-type: none"> - bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments - bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratory - bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness - research and development laboratory activities provided the activity produces no commercial product or feedstock material - VOC emissions during startup or shutdown operations from sources using incineration or other types of combustion to control VOC emissions whenever the off-gas contains an explosive mixture during startup or shutdown operation, if the exemption is approved by the Director.) <p>Verify that VOC emissions from any printing press or drying oven of these printing operations are not discharged into the atmosphere unless one of the following conditions is met:</p> <ul style="list-style-type: none"> - captured VOC emissions are reduced by at least 90 percent by an incineration system or 95 percent by a carbon adsorption system or any other control system: <ul style="list-style-type: none"> - for packaging rotogravure printing operations, at least 65 percent overall reduction of the VOC emissions is achieved - for publication rotogravure printing operations at least 75 percent overall reduction of the VOC emissions is achieved - for flexographic printing operations, at least 60 percent overall reduction of the VOC emissions is achieved - the solvent portion of the ink, as it is applied on the substrate, consists of at least 75 percent water by volume and no more than 25 percent organic solvent by volume - the ink contains by volume at least 60 percent nonvolatile material

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	<ul style="list-style-type: none"> - the printing system uses a combination of solvent-borne and water-borne ink such that at least a 70 percent by volume overall reduction in solvent usage is achieved when compared to all solvent-borne ink usage - the ink, including any solvents added to it, contains no more than 0.5 lb of VOCs per lb of solids in the ink; only flexographic printing and packaging rotogravure printing may use this option. <p>(NOTE: When a combination of solvent borne and waterborne ink is used, the permit contains a condition stating the maximum quantity of solventborne ink that each printing unit may use or that the facility as a whole may use.)</p>
AE.60.2.NC. Graphic arts operations proposing to comply with emissions requirements by installing emission control equipment, replacing process equipment, or modifying existing process equipment must meet a specific compliance schedule (15A NCAC 2D.0909(c)) [Revised March 1998].	<p>Verify that the facility submits a permit application and compliance schedule within 6 mo after the Director publishes notice in the North Carolina Register that an area is in violation of the ambient air quality standard for ozone.</p> <p>Verify that the compliance schedule contains the following increments of progress:</p> <ul style="list-style-type: none"> - a date by which contracts for the emission control system and process equipment is awarded or orders issued for purchase of component parts - a date by which onsite construction or installation of the emission control and process equipment begins - a date by which onsite construction or installation of the emission control and process equipment is completed. <p>Verify that final compliance with emissions requirements is achieved within 3 yr after the Director publishes notice in the North Carolina Register that an area is in violation of the ambient air quality standard for ozone.</p>
AE.60.3.NC. [Deleted March 2004].	<p>(NOTE: 15A NCAC 2D.0950 repealed Eff. July 1, 2000.)</p>
AE.60.4.NC. Graphic arts operations with limited emissions must meet record keeping and reporting requirements (15A NCAC 2Q.0803) [Added March 2001; Revised March 2005; Revised March 2009].	<p>(NOTE: Moved from AE.6.5.NC. and repeated in AE.100.3.NC. and AE.125.7NC.)</p> <p>(NOTE: A graphic arts operation is exempt from the requirements of Section .0500 (Title V procedures) if the operation complies with these requirements.)</p> <p>Verify that the recordkeeping and reporting requirements below are met for a facility whose potential emissions meet the following limits:</p> <ul style="list-style-type: none"> - of volatile organic compounds are less than 100 tons per yr but more than or equal to 75 tons per year - of each hazardous air pollutant is less than 10 tons per yr but more than or

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	<p>equal to 7.5 tons per yr or</p> <ul style="list-style-type: none"> - of all hazardous air pollutants combined are less than 25 tons per yr but more than or equal to 18 tons per year. <p>Verify that facilities with the potential emissions listed above maintain monthly consumption records of each material used containing volatile organic compounds as follows:</p> <ul style="list-style-type: none"> - quantity of volatile organic compound in lb per gal of each material used - lb of volatile organic compounds of each material used per mo and total lb of volatile organic compounds of each material used during the 12-mo period ending on that mo - quantity of each hazardous air pollutant in lb per gal of each material used - lb of each hazardous air pollutant of each material used per mo and total lb of each hazardous air pollutant of each material used during the 12-mo period ending on that mo - quantity of all hazardous air pollutants in lb per gal of each material used - lb of all hazardous air pollutants of each material used per mo and total lb of all hazardous air pollutants of each material used during the 12-mo period ending on that mo. <p>Verify that a report containing the following information is submitted to the Director each quarter, or more frequently if required by a permit condition, summarizing emissions of volatile organic compounds and hazardous air pollutants:</p> <ul style="list-style-type: none"> - lb volatile organic compounds used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method - greatest quantity in lb of an individual hazardous air pollutant used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method - lb of all hazardous air pollutants used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method. <p>Verify that the reporting requirements below are met for a facility whose potential emissions meet the following limits:</p> <ul style="list-style-type: none"> - of volatile organic compounds are less than 75 tons per year - of each hazardous air pollutants is less than 7.5 tons per year - of all hazardous air pollutants combined are less than 18 tons per year. <p>Verify that facilities with the potential emissions listed above submit to the regional supervisors of the appropriate Division regional office by March 1 of each year, or more frequently if required by a permit condition, a report summarizing emissions of volatile organic compounds and hazardous air</p>

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	<p>pollutants containing the following:</p> <ul style="list-style-type: none"> - lb volatile organic compounds used during the previous calendar year - lb of the highest individual hazardous air pollutant used during the previous year - lb of all hazardous air pollutants used during the previous year. <p>Verify that owners or operators of all sources maintain purchase orders and invoices of materials containing volatile organic compounds (which will be made available to the Director upon request to confirm the general accuracy of the reports regarding materials usage).</p> <p>Verify that owners or operators of all sources retain purchase orders and invoices for a period of at least 3 yr.</p> <p>Verify that owners or operators of all sources report to the Director any exceedance of a limit within one week of occurrence.</p> <p>Verify that owners or operators of all sources certify all submittals as to the truth, completeness, and accuracy of all information recorded and reported over the signature of the appropriate official.</p> <p>Verify that copies of all required records are maintained at the facility and are available for inspection by personnel of the Division on demand.</p> <p>(NOTE: Potential emissions for graphic arts operation exempted from needing a permit will be determined using actual emissions without accounting for any air pollution control devices to reduce emissions of volatile organic compounds or hazardous air pollutants including perchloroethylene, methyl chloroform, and methyl chloride from the coating operation, solvent cleaning operation or graphic arts operation. All volatile organic compounds and perchloroethylene, methyl chloroform, and methyl chloride are assumed to evaporate and be emitted into the atmosphere at the source.)</p> <p>(NOTE: These recording and reporting requirements do not apply to any facility whose potential emissions are greater than or equal to:</p> <ul style="list-style-type: none"> - 100 tons per yr of each regulated air pollutant - 10 tons per yr of each hazardous air pollutant - 25 tons per yr of all hazardous air pollutants combined. <p>These limits are determined by criteria set out in each individual source category rule. [A particular maximum achievable control technology (MACT) standard promulgated under 40 CFR Part 63 may have a lower applicability threshold than those contained here. The threshold contained in that MACT standard will be used to determine the applicability of that MACT standard.]])</p>

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<p>AE.65.</p> <p>FUGITIVE EMISSIONS</p> <p>AE.65.1.NC. Industrial processes must limit visible emissions (15A NCAC 2D.0540 (b) and (c)) [Added February 1999].</p>	<p>(NOTE: "Fugitive non-process dust emission" means particulate matter that is not collected by a capture system and is generated from areas such as pit areas, process areas, haul roads, stockpiles, and plant roads. "Substantive complaints" means complaints that are verified with physical evidence acceptable to the Division (15A NCAC 2D.0540(a).)</p> <p>Verify that a facility required to comply with rules for "Particulates from Hot Mix Asphalt Plants" (15A NCAC 2D.0506), "Particulates from Mica or Feldspar Processing Plants" (15A NCAC 2D.0509), "Particulates from Sand, Gravel, or Crushed Stone Operations" (15A NCAC 2D.0510), or "Particulates from Lightweight Aggregate Processes" (15A NCAC 2D.0510), does not cause or allow fugitive non-process dust emissions to cause or contribute to substantive complaints.</p> <p>Verify that, if fugitive non-process dust emissions cause or contribute to substantive complaints, the owner or operator of the facility:</p> <ul style="list-style-type: none"> - within 30 days upon receipt of written notification from the Director of a second substantive complaint in a 12-mo period, submit to the Director a written description of what has been done and what will be done to reduce fugitive non-process dust emissions from that part of the facility that caused the second substantive complaint - within 90 days of receipt of written notification from the Director of a second substantive complaint in a 12-mo period, submit to the Director a control plan - within 30 days after the Director approves the plan, be in compliance with the plan.

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<p>AE.67.</p> <p>TOXIC EMISSIONS</p> <p>AE.67.1.NC. Facilities operating specific sources of any toxic air pollutants must have a permit (15A NCAC 2Q.0701 (a)) [Revised March 1998; Revised February 1999; Revised March 2007].</p> <p>AE.67.2.NC. Sources emitting a toxic air pollutant must meet specific recordkeeping requirements (15A NCAC 2D.0605 and 2D.1105) [Revised March 2007].</p>	<p>Verify that facilities do not emit any toxic air pollutant (see Appendix 1-16) into the atmosphere at a rate that exceeds the applicable rate(s) in Appendix 1-13 without having received a permit to emit toxic air pollutants.</p> <p>(NOTE: See Appendix 1-17 for exemptions to this requirement.)</p> <p>Verify that the owner or operator of any toxic air pollutant emission source complies with the monitoring, recordkeeping, and reporting requirements in the permit.</p> <p>Verify that the following records are maintained:</p> <ul style="list-style-type: none"> - records detailing all malfunctions - records of all testing - records of all monitoring - records necessary to determine compliance - for unpermitted sources, records necessary to determine compliance. <p>Verify that copies of all required records and reports are retained by the facility for 2 yr after the date on which the record was made or the report submitted, except the Director may extend the retention period in particular instances.</p> <p>Verify that copies of all records and reports are made available to the Director upon request.</p>

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<p>DRY CLEANING OPERATIONS</p> <p>AE.70. Petroleum Solvent</p> <p>AE.70.1.NC. Petroleum solvent dry cleaning facilities whose VOC emissions are no more than 15 lb/day in specific counties that consume 32,500 gal or more of petroleum solvent annually must meet specific operating requirements (15A NCAC 2D.0902 and 2D.0945) [Revised March 2004; Revised March 2009].</p>	<p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This does apply to facilities with the potential to emit greater than or equal to 100 tons or more of volatile organic compounds per year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>Verify that facilities operating a petroleum solvent dryer take one of the following steps:</p> <ul style="list-style-type: none"> - limit emissions of VOCs to the atmosphere to an average of 3.5 lb of VOCs per 100 lb dry weight of articles dry cleaned - install and operate a solvent recovery dryer so that the dryer remains closed and the recovery phase continues until a final recovered solvent flow rate of 50 mL/ min is attained. <p>Verify that facilities operating a petroleum solvent filter takes one of the following steps:</p> <ul style="list-style-type: none"> - reduce the VOC content in all filter wastes to 1.0 lb or less per 100 lb dry weight of articles dry cleaned, before disposal and exposure to the atmosphere - install and operate a cartridge filter and drain the filter cartridges in their sealed housings for 8 h or more before their removal. <p>Verify that the dry cleaning facility is inspected every 15 days and all perceptible leaks are repaired within 15 working days after being identified.</p> <p>Verify that, if necessary repair parts are not on hand, the facility orders these parts within 15 working days and repairs the leaks no later than 15 working days following the arrival of the necessary parts.</p> <p>Verify that the facility maintains records of the following for a minimum of 2 yr after the date on which the record was made:</p>

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<p>AE.70.2.NC. Petroleum solvent dry cleaners proposing to comply with emissions requirements by installing emission control equipment, replacing process equipment, or modifying existing process equipment must meet a specific compliance schedule (15A NCAC 2D.0909(c)) [Revised March 1998; Revised March 2008].</p>	<ul style="list-style-type: none"> - when inspections were made - what was inspected - leaks found - repairs made - when repairs were made. <p>Verify that copies of all required records and reports are made available within a reasonable time to the Director upon written request.</p> <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - gasoline service stations or gasoline dispensing facilities regardless of VOC emission levels - sources whose emissions do not exceed 800 pounds of volatile organic compounds per calendar month and that are: <ul style="list-style-type: none"> - bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments - bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratory - bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness - research and development laboratory activities provided the activity produces no commercial product or feedstock material - VOC emissions during startup or shutdown operations from sources using incineration or other types of combustion to control VOC emissions whenever the off-gas contains an explosive mixture during startup or shutdown operation, if the exemption is approved by the Director.) <p>(NOTE: See AE.10.1.NC. for specific counties and exemptions.)</p> <p>Verify that the facility submits a permit application and compliance schedule within 6 mo after the Director publishes notice in the North Carolina Register that an area is in violation of the ambient air quality standard for ozone.</p> <p>Verify that the compliance schedule contains the following increments of progress:</p> <ul style="list-style-type: none"> - a date by which contracts for the emission control system and process equipment is awarded or orders issued for purchase of component parts - a date by which onsite construction or installation of the emission control and process equipment begins - a date by which onsite construction or installation of the emission control and process equipment is completed.

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	<p>Verify that final compliance with emissions requirements is achieved within 3 yr after the Director publishes notice in the North Carolina Register that an area is in violation of the ambient air quality standard for ozone.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>

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<p>DRY CLEANING OPERATIONS</p> <p>AE.75. Perchloroethylene</p> <p>AE.75.1.NC. [Deleted February 1999].</p>	<p>(NOTE: Regulation repealed 1 July 1998.)</p>

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AE.80. ACID PRODUCTION UNITS AE.80.1.NC. Sulfuric acid plants must limit emissions (15A NCAC 2D.0517). AE.80.2.NC. Sulfuric acid plants must limit NO _x emissions (15A NCAC 2D.0519 (a)) [Revised March 2008]. AE.80.3.NC. Nitric acid plants or sulfuric acid plants must meet specific emissions monitoring requirements (15A NCAC 2D.0604 (a)).	<p>Verify that emissions of sulfur dioxide or sulfuric acid mist does not exceed the following limits:</p> <ul style="list-style-type: none"> - 27 lb of sulfur dioxide per ton of sulfuric acid produced - 0.5 lb of acid mist (expressed as sulfuric acid) per ton of sulfuric acid produced <p>Verify that emissions of NO₂ do not exceed 5.8 lb/ton of acid produced.</p> <p>Verify that emissions of NO₂ do not exceed 5.8 lb/ton of acid produced from any sulfuric acid manufacturing plants.</p> <p>(NOTE: The following circumstances exempt the plant from these monitoring requirements:</p> <ul style="list-style-type: none"> - the source is not subject to an emission control standard - during a period of monitoring system malfunction if the facility shows, to the satisfaction of the Director, that the malfunction was unavoidable and is being repaired as expeditiously as practicable - proof of continuous monitoring system performance is provided on request of the Director when system repairs or adjustments have been made - the source is operated less than 30 days per year.) <p>Verify that the plant monitors as described in Paragraphs 2 and 3.1.1 D through 3.1.5 of Appendix P of 40 CFR Part 51.</p> <p>(NOTE: The performance specifications are those found in Appendix B of 40 CFR Part 60 and Paragraphs 3.2 through 3.8 of Appendix P of 40 CFR Part 51.)</p> <p>Verify that excess emissions are reported quarterly to the Commission in the manner described in Paragraphs 4 and 5.1 through 5.3.3 of Appendix P of 40 CFR Part 51.</p> <p>(NOTE: The minimum requirements described in these referenced portions of Appendix P of 40 CFR Part 51 are adopted by reference.)</p> <p>(NOTE: When effluents from 2 or more affected facilities of similar design</p>

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	and operating characteristics are combined before being released to the atmosphere, the monitoring system may be installed on the combined effluent.)

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AE.100. COATING OPERATIONS AE.100.1.NC. [Deleted March 2004]. AE.100.2.NC. Abrasive blasting operations conducted outdoors or vented to the atmosphere must meet visible emission standards (15D NCAC 2D.0541) [Added March 2001].	<p>(NOTE: 15A NCAC 2D.0950 was repealed.)</p> <p>Verify that any abrasive blasting operation conducted outside a building or conducted indoors and vented to the atmosphere is performed in accordance with the requirements set forth in 15A NCAC 2D.0521, Control of Visible Emissions (see AE.9.2.NC.)</p> <p>Verify that the visible emissions reading for abrasive blasting performed outside a building is taken at a spot approximately one meter above the point of abrasive blasting with a viewing distance of approximately 5 meters.</p> <p>Verify that all abrasive blasting operations are conducted within a building unless it is conducted under one or more of the following conditions:</p> <ul style="list-style-type: none"> - when the item to be blasted exceeds eight ft in any dimension - when the surface being blasted is situated at its permanent location or not further away from its permanent location than is necessary to allow the surface to be blasted - when the abrasive blasting operation is conducted at a private residence or farm and the visible emissions created by this abrasive blasting operation do not migrate beyond the property boundary of the private residence or farm on which the abrasive blasting operation is being conducted. <p>Verify that appropriate measures to ensure that the fugitive dust emissions created by abrasive blasting operation do not migrate beyond the property boundaries in which the abrasive blasting operation is being conducted when the following occurs outside a building:</p> <ul style="list-style-type: none"> - when the item exceeds eight ft in any dimension - when the surface being blasted is situated in its permanent location or not further away from its permanent location than is necessary to allow the surface to be blasted. <p>(NOTE: Appropriate measures to prevent fugitive dust emissions include the following:</p> <ul style="list-style-type: none"> - the addition of a suppressant to the abrasive blasting material - wet abrasive blasting - hydroblasting - vacuum blasting - shrouded blasting - shrouded hydroblasting.)

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<p>AE.100.3.NC. Coating with limited emissions must meet record keeping and reporting requirements (15A NCAC 2Q.0803) [Added March 2001; Revised March 2005].</p>	<p>(NOTE: Moved from AE.6.5.NC. and repeated in AE.60.5.NC. and AE.125.7.NC.)</p> <p>(NOTE: A coating operation is exempt from the requirements of Section .0500 (Title V procedures) if the operation complies with these requirements.)</p> <p>(NOTE: Potential emissions for a coating operation exempted from needing a permit will be determined using actual emissions without accounting for any air pollution control devices to reduce emissions of volatile organic compounds or hazardous air pollutants including perchloroethylene, methyl chloroform, and methyl chloride from the coating operation, solvent cleaning operation or graphic arts operation. All volatile organic compounds and perchloroethylene, methyl chloroform, and methyl chloride are assumed to evaporate and be emitted into the atmosphere at the source.)</p> <p>(NOTE: These recording and reporting requirements do not apply to any facility whose potential emissions are greater than or equal to:</p> <ul style="list-style-type: none"> - 100 tons per yr of each regulated air pollutant - 10 tons per yr of each hazardous air pollutant - 25 tons per yr of all hazardous air pollutants combined. <p>These limits are determined by criteria set out in each individual source category rule. [A particular maximum achievable control technology (MACT) standard promulgated under 40 CFR Part 63 may have a lower applicability threshold than those contained here. The threshold contained in that MACT standard will be used to determine the applicability of that MACT standard.]</p> <p>Verify that the recordkeeping and reporting requirements below are met for a facility whose potential emissions meet the following limits:</p> <ul style="list-style-type: none"> - of volatile organic compounds are less than 100 tons per yr but more than or equal to 75 tons per year - of each hazardous air pollutant is less than 10 tons per yr but more than or equal to 7.5 tons per yr or - of all hazardous air pollutants combined are less than 25 tons per yr but more than or equal to 18 tons per year. <p>Verify that facilities with the potential emissions listed above maintain monthly consumption records of each material used containing volatile organic compounds as follows:</p> <ul style="list-style-type: none"> - quantity of volatile organic compound in lb per gal of each material used - lb of volatile organic compounds of each material used per mo and total lb of volatile organic compounds of each material used during the 12-mo period ending on that mo - quantity of each hazardous air pollutant in lb per gal of each material used - lb of each hazardous air pollutant of each material used per mo and total lb of each hazardous air pollutant of each material used during the 12-mo

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	<p>period ending on that mo</p> <ul style="list-style-type: none"> - quantity of all hazardous air pollutants in lb per gal of each material used - lb of all hazardous air pollutants of each material used per mo and total lb of all hazardous air pollutants of each material used during the 12-mo period ending on that mo. <p>Verify that a report containing the following information is submitted to the Director each quarter, or more frequently if required by a permit condition, summarizing emissions of volatile organic compounds and hazardous air pollutants:</p> <ul style="list-style-type: none"> - lb volatile organic compounds used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method - greatest quantity in lb of an individual hazardous air pollutant used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method - lb of all hazardous air pollutants used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method. <p>Verify that the reporting requirements below are met for a facility whose potential emissions meet the following limits:</p> <ul style="list-style-type: none"> - of volatile organic compounds are less than 75 tons per year - of each hazardous air pollutants is less than 7.5 tons per year - of all hazardous air pollutants combined are less than 18 tons per year. <p>Verify that facilities with the potential emissions listed above submit to the regional supervisors of the appropriate Division regional office by March 1 of each year, or more frequently if required by a permit condition, a report summarizing emissions of volatile organic compounds and hazardous air pollutants containing the following:</p> <ul style="list-style-type: none"> - lb volatile organic compounds used during the previous calendar year - lb of the highest individual hazardous air pollutant used during the previous year - lb of all hazardous air pollutants used during the previous year. <p>Verify that owners or operators of all sources maintain purchase orders and invoices of materials containing volatile organic compounds (which will be made available to the Director upon request to confirm the general accuracy of the reports regarding materials usage).</p> <p>Verify that owners or operators of all sources retain purchase orders and invoices for a period of at least 3 yr.</p>

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	<p>Verify that owners or operators of all sources report to the Director any exceedance of a limit within one week of occurrence.</p> <p>Verify that owners or operators of all sources certify all submittals as to the truth, completeness, and accuracy of all information recorded and reported over the signature of the appropriate official.</p> <p>Verify that copies of all required records are maintained at the facility and are available for inspection by personnel of the Division on demand.</p>

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DEGREASING OPERATIONS AE.115. General AE.115.1.NC. [Deleted March 2004]. AE.115.2.NC. Solvent metal cleaning operations proposing to comply with emissions requirements by installing emission control equipment, replacing process equipment, or modifying existing process equipment must meet a specific compliance schedule (15A NCAC 2D.0909(c)) [Revised March 1998].	<p>(NOTE: 15A NCAC 2D.0950 repealed Eff. July 1, 2000.)</p> <p>Verify that the facility submits a permit application and compliance schedule within 6 mo after the Director publishes notice in the North Carolina Register that an area is in violation of the ambient air quality standard for ozone.</p> <p>Verify that the compliance schedule contains the following increments of progress:</p> <ul style="list-style-type: none"> - a date by which contracts for the emission control system and process equipment is awarded or orders issued for purchase of component parts - a date by which onsite construction or installation of the emission control and process equipment begins - a date by which onsite construction or installation of the emission control and process equipment is completed. <p>Verify that final compliance with emissions requirements is achieved within 3 yr after the Director publishes notice in the North Carolina Register that an area is in violation of the ambient air quality standard for ozone.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>

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<p>DEGREASING OPERATIONS</p> <p>AE.116. Cold Cleaning</p> <p>AE.116.1.NC. Cold cleaning operations sources whose VOC emissions are 15 lb/day or more in specific counties must comply with specific equipment and operating requirements (15A NCAC 2D.0930 (d)) [Revised March 1998; Revised March 2004; Revised March 2009].</p>	<p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This does apply to facilities with the potential to emit greater than or equal to 100 tons or more of volatile organic compounds per year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>Verify that the cold cleaner is equipped with a cover and the cover is designed to be easily operated with one hand, if one of the following conditions applies:</p> <ul style="list-style-type: none"> - solvent volatility is greater than 15 mm of Hg or 0.3 psi measured at 100 deg F - the solvent is agitated - the solvent is heated. <p>Verify that the cleaner is equipped with a facility for draining cleaned parts constructed internally so that parts are enclosed under the cover while draining if the solvent volatility is greater than 32 mm of mercury or 0.6 psi measured at 100 deg F.</p> <p>(NOTE: The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.)</p> <p>Verify that one of the following control devices is installed if solvent volatility is greater than 33 mm of mercury or 0.6 psi measured at 100 deg F, or if the solvent is heated above 120 deg F:</p> <ul style="list-style-type: none"> - freeboard which gives a freeboard ratio greater than or equal to 0.7 - water cover if the solvent is insoluble in and heavier than water - other systems of equivalent control, such as refrigerated chiller or carbon adsorption, approved by the Director. <p>Verify that a permanent, conspicuous label, summarizing the operating</p>

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	<p>requirements, is provided.</p> <p>Verify that waste solvent is stored only in covered containers and not disposed of or transferred to another party such that greater than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere.</p> <p>Verify that the cover is closed whenever parts are not being handled in the cleaner.</p> <p>Verify that cleaned parts are drained for at least 15 s or until dripping ceases.</p> <p>Verify that, if used, a solvent spray that is a solid fluid stream is used (not a fine, atomized, or shower type spray) at a pressure that does not cause excessive splashing.</p> <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - gasoline service stations or gasoline dispensing facilities regardless of VOC emission levels - sources whose emissions do not exceed 800 pounds of volatile organic compounds per calendar month and that are: <ul style="list-style-type: none"> - bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments - bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratory - bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness - research and development laboratory activities provided the activity produces no commercial product or feedstock material - VOC emissions during startup or shutdown operations from sources using incineration or other types of combustion to control VOC emissions whenever the off-gas contains an explosive mixture during startup or shutdown operation, if the exemption is approved by the Director.)

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<p>DEGREASING OPERATIONS</p> <p>AE.117. Vapor Cleaning</p> <p>AE.117.1.NC. An open top vapor degreaser with VOC emissions of 15 lb/day or more in specific counties must comply with equipment and operating requirements (15A NCAC 2D.0930 (e)) [Revised March 1998; Revised March 2004; Revised March 2009].</p>	<p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This does apply to facilities with the potential to emit greater than or equal to 100 tons or more of volatile organic compounds per year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>Verify that the vapor degreaser is equipped with a cover that can be opened and closed easily without disturbing the vapor zone.</p> <p>Verify that the following safety switches or devices are provided on the degreaser:</p> <ul style="list-style-type: none"> - a condenser flow switch and thermostat or other device which prevents heat input if the condenser coolant is either not circulating or too warm - a spray safety switch or other device that shuts off the sprays pump if the vapor level drops more than 10 in. - a vapor level control thermostat or other device that prevents heat input when the vapor level rises too high. <p>Verify that one of the following control devices is installed on the degreaser:</p> <ul style="list-style-type: none"> - a freeboard ratio greater than or equal to 0.75 - if the degreaser opening is greater than 10.8 square ft, a powered cover - a refrigerated chiller - an enclosed design (the cover or door opens only when the dry part is actually entering or exiting the degreaser.) - a carbon adsorption system, with ventilation greater than or equal to 50 cfm/ft² of air/vapor area (when cover is open), and exhausting less than 25 ppm of solvent averaged over one complete adsorption cycle. <p>(NOTE: Open top vapor degreasers with an open area smaller than 10.8 ft² are exempt from this requirement for a control device.)</p> <p>Verify that the cover is kept closed at all times except when processing workloads</p>

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<p>AE.117.2.NC. A conveyORIZED degreaser with VOC emissions of 15 lb/day or more in specific counties</p>	<p>through the degreaser.</p> <p>Verify that solvent carryout is minimized by:</p> <ul style="list-style-type: none"> - racking parts to allow complete drainage - moving parts in and out of the degreaser at least than 11 ft/min - holding parts in the vapor zone at least 30 s or until condensation ceases - tipping out any pools of solvent on cleaned parts before removal from the vapor zone - allowing parts to dry within the degreaser for at least 15 s or until visually dry. <p>Verify that porous or absorbent materials, such as cloth, leather, wood, or rope, are not degreased.</p> <p>Verify that no more than half of the degreaser's open top area is occupied with a workload.</p> <p>Verify that the degreaser is not loaded to the point where the vapor level would drop more than 10 in. when the workload is removed from the vapor zone.</p> <p>Verify that spraying is always below the vapor level.</p> <p>Verify that solvent leaks are repaired immediately or the degreaser is shutdown.</p> <p>Verify that waste solvent is stored only in covered containers and not disposed of or transferred to another party, such that greater than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere.</p> <p>Verify that the cleaner is not operated so as to allow water to be visually detectable in solvent exiting the water separator.</p> <p>Verify that ventilation fans are not used near the degreaser opening, nor provide exhaust ventilation exceeding 65 cfm/ft² of degreaser open area, unless necessary to meet Occupational Safety and Health Administration (OSHA) requirements.</p> <p>Verify that a permanent, conspicuous label, summarizing the operating procedures, is provided.</p> <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - conveyORIZED degreasers with an air/vapor interface smaller than 21.6 ft2.) <p>(NOTE: This does apply to facilities with the potential to emit greater than or equal to 100 tons or more of volatile organic compounds per year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County

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<p>must comply with specific equipment and operating requirements (15A NCAC 2D.0930 (f)) [Revised March 1998; Revised March 2004; Revised March 2009].</p>	<ul style="list-style-type: none"> - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - conveyORIZED degreasers with an air/vapor interface smaller than 21.6 ft².) <p>Verify that workplace fans are not used near the degreaser opening, nor exhaust ventilation exceeding 65 cfm/ft² of degreaser opening provided, unless necessary to meet OSHA requirements.</p> <p>Verify that one of the following control devices is provided:</p> <ul style="list-style-type: none"> - refrigerated chiller - carbon adsorption system, with ventilation greater than or equal to 50 cfm/ft² of air/vapor area (when downtime covers are open), and exhausting less than 25 ppm of solvent by volume averaged over a complete adsorption cycle. <p>Verify that the cleaner has equipment, such as a drying tunnel or rotating (tumbling) basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor.</p> <p>Verify that all of the following safety switches or devices are provided:</p> <ul style="list-style-type: none"> - a condenser flow switch and thermostat or other device which prevents heat input if the condenser coolant is either not circulating or too warm - a spray safety switch or other device that shuts off the spray pump or the conveyor if the vapor level drops more than 10 in. - a vapor level control thermostat or other device that prevents heat input when the vapor level rises too high. <p>Verify that openings are minimized during operation so that entrances and exits silhouette workloads with an average clearance between parts and the edge of the degreaser opening of less than 4 in. or less than 10 percent of the width of the opening.</p> <p>Verify that downtime covers are provided for closing off the entrance and exit during shutdown hours.</p> <p>Verify that carryout emissions are minimized by both:</p> <ul style="list-style-type: none"> - racking parts for best drainage - maintaining the vertical conveyor speed at less than 11 ft/min.

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	<p>Verify that waste solvent is stored only in covered containers and not disposed of or transferred to another party, such that greater than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere.</p> <p>Verify that solvent leaks are repaired immediately, or the degreaser is shut down.</p> <p>Verify that the cleaner is not operated so as to allow water to be visually detectable in solvent exiting the water separator.</p> <p>Verify that downtime covers are placed over entrances and exits or conveyORIZED degreasers immediately after conveyors and exhausts are shutdown and not removed until just before start-up.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>

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AE.125. MISCELLANEOUS VOC OPERATIONS AE.125.1.NC. [Deleted March 2001]. AE.125.2.NC. Facilities operating any VOC emission source or control equipment must meet specific operational requirements (15A NCAC 2D.0903) [Citation Revised March 2004; Revised March 2007]. AE.125.3.NC. Facilities operating any VOC emission source or control equipment must not conceal emissions (15A NCAC 2D.0906). AE.125.4.NC. [Deleted March 2004]. AE.125.5.NC. Miscellaneous facilities (facilities using VOCs as solvents, carriers, material processing media, or industrial chemical reactants,	 [15A NCAC 2D.0518 repealed.] Verify that the owner or operator of any volatile organic compound emission source or control equipment installs, operates, and maintains necessary process and control equipment monitoring instruments or procedures. Verify that data and reports relating to monitoring instruments or procedures that will, upon review, document the compliance status of the VOC emission source or control equipment are maintained in writing. Verify that the data and reports are, at a minimum, maintained daily and document compliance to the satisfaction of the Director. Verify that the owner or operator of any volatile organic compound emission sources or control equipment complies with the monitoring, recordkeeping, and reporting requirements (see AE.7.4.NC.). Verify that the facility does not build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission that would otherwise constitute a violation. (NOTE: This exclusion includes, but is not limited to, the use of gaseous diluents to achieve compliance and piecemeal carrying out of an operation to avoid coverage by a regulation that applies only to operations larger than a specified size.) (NOTE: 15A NCAC 2D.0950 repealed Eff. July 1, 2000.) Verify that miscellaneous facilities (facilities using VOCs as solvents, carriers, material processing media, or industrial chemical reactants, or in other similar uses, or than mix or blend VOCs for which there is no other applicable requirement) with the potential to emit 100 ton/yr or more of VOCs meet one of

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<p>or in other similar uses, or than mix or blend VOCs for which there is no other applicable requirement) whose VOC emissions are no more than 15 lb/day in specific counties, must meet VOC control requirements (15A NCAC 2D.0902 and 2D.0951) [Revised March 2002; Revised March 2004; Revised March 2009].</p>	<p>the following criteria:</p> <ul style="list-style-type: none"> - installs and operates control equipment meeting the requirements of best available control technology - limits emissions of VOCs from coating lines not covered to no more than 6.7 lb/ gal of solids delivered to the coating applicator - reduces emissions of VOCs from all sources at the site not covered by the other 2 methods or another requirement in this section by at least 85 percent by weight or down to 40 lb/day by destruction or by capture of VOCs in the emission stream. <p>(NOTE: This does apply to facilities with the potential to emit greater than or equal to 100 tons or more of volatile organic compounds per year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - gasoline service stations or gasoline dispensing facilities regardless of VOC emission levels - sources whose emissions do not exceed 800 pounds of volatile organic compounds per calendar month and that are: <ul style="list-style-type: none"> - bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments - bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratory - bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness - research and development laboratory activities provided the activity produces no commercial product or feedstock material - VOC emissions during startup or shutdown operations from sources using incineration or other types of combustion to control VOC emissions whenever the off-gas contains an explosive mixture during startup or shutdown operation, if the exemption is approved by the Director.)

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AE.125.6.NC. Work practices for sources of volatile organic compounds whose VOC emissions are no more than 15 lb/day must meet specific VOC control requirements (15A NCAC 2D.0902 (h) and 2D.0958) [Revised March 2002; Revised March 2009].	<p>(NOTE: This applies to all facilities that use volatile organic compounds as solvents, carriers, material processing media, or industrial chemical reactants, or in other similar uses, or that mix, blend, or manufacture volatile organic compounds, or emit volatile organic compounds as a product of chemical reactions. It does not apply to: architectural or maintenance coating; or sources subject to 40 CFR Part 63, Subpart JJ.)</p> <p>Verify that all material, including waste material, containing volatile organic compounds are stored in containers covered with a tightly fitting lid that is free of cracks, holes, or other defects, when not in use.</p> <p>Verify that spills are cleaned up as soon as possible following proper safety procedures</p> <p>Verify that wipe rags are stored in closed containers.</p> <p>Verify that sponges, fabric, wood, paper products, and other absorbent materials are not cleaned.</p> <p>Verify that solvents used to clean supply lines and other coating equipment are drained into closable containers and close containers immediately after each use.</p> <p>Verify that mixing, blending, and manufacturing vats and containers are cleaned by adding cleaning solvent, closing the vat or container before agitating the cleaning solvent.</p> <p>Verify that, when cleaning parts, the following operational standards are met:</p> <ul style="list-style-type: none"> - flush parts in the freeboard area - take precautions to reduce the pooling of solvent on and in the parts - tilt or rotate parts to drain solvent and allow a minimum of 15 seconds for drying or until all dripping has stopped, whichever is longer - cleaning machines is not filled above the fill line - solvent is not agitated to the point of causing splashing. <p>(NOTE: All sources at a facility subject to this Rule must be permitted unless they are exempted from permitting by 15A NCAC 2Q.0102, Activities Exempted From Permit Requirements, see Appendix 1-4.)</p> <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - gasoline service stations or gasoline dispensing facilities regardless of VOC emission levels - sources whose emissions do not exceed 800 pounds of volatile organic compounds per calendar month and that are: <ul style="list-style-type: none"> - bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments

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AE.125.7.NC. Solvent cleaning operations with limited emissions must meet record keeping and reporting requirements (15A NCAC 2Q.0803) [Added March 2001; Revised March 2005; Revised March 2009].	<ul style="list-style-type: none"> - bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratory - bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness - research and development laboratory activities provided the activity produces no commercial product or feedstock material - VOC emissions during startup or shutdown operations from sources using incineration or other types of combustion to control VOC emissions whenever the off-gas contains an explosive mixture during startup or shutdown operation, if the exemption is approved by the Director.) <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>
	<p>(NOTE: Moved from AE.6.5.NC. and repeated in AE.60.5.NC. and AE.100.3.NC.)</p> <p>(NOTE: A solvent cleaning operation is exempt from the requirements of Section .0500 (Title V procedures) if the operation complies with these requirements.)</p> <p>Verify that the recordkeeping and reporting requirements below are met for a facility whose potential emissions meet the following limits:</p> <ul style="list-style-type: none"> - of volatile organic compounds are less than 100 tons per yr but more than or equal to 75 tons per year - of each hazardous air pollutant is less than 10 tons per yr but more than or equal to 7.5 tons per yr or - of all hazardous air pollutants combined are less than 25 tons per yr but more than or equal to 18 tons per year. <p>Verify that facilities with the potential emissions listed above maintain monthly consumption records of each material used containing volatile organic compounds as follows:</p> <ul style="list-style-type: none"> - quantity of volatile organic compound in lb per gal of each material used - lb of volatile organic compounds of each material used per mo and total lb of volatile organic compounds of each material used during the 12-mo period ending on that mo - quantity of each hazardous air pollutant in lb per gal of each material used - lb of each hazardous air pollutant of each material used per mo and total lb of each hazardous air pollutant of each material used during the 12-mo period ending on that mo - quantity of all hazardous air pollutants in lb per gal of each material used - lb of all hazardous air pollutants of each material used per mo and total lb of all hazardous air pollutants of each material used during the 12-mo period ending on that mo.

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	<p>Verify that a report containing the following information is submitted to the Director each quarter, or more frequently if required by a permit condition, summarizing emissions of volatile organic compounds and hazardous air pollutants:</p> <ul style="list-style-type: none"> - lb volatile organic compounds used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method - greatest quantity in lb of an individual hazardous air pollutant used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method - lb of all hazardous air pollutants used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method. <p>Verify that the reporting requirements below are met for a facility whose potential emissions meet the following limits:</p> <ul style="list-style-type: none"> - of volatile organic compounds are less than 75 tons per year - of each hazardous air pollutants is less than 7.5 tons per year - of all hazardous air pollutants combined are less than 18 tons per year. <p>Verify that facilities with the potential emissions listed above submit to the regional supervisors of the appropriate Division regional office by March 1 of each year, or more frequently if required by a permit condition, a report summarizing emissions of volatile organic compounds and hazardous air pollutants containing the following:</p> <ul style="list-style-type: none"> - lb volatile organic compounds used during the previous calendar year - lb of the highest individual hazardous air pollutant used during the previous year - lb of all hazardous air pollutants used during the previous year. <p>Verify that owners or operators of all sources maintain purchase orders and invoices of materials containing volatile organic compounds (which will be made available to the Director upon request to confirm the general accuracy of the reports regarding materials usage).</p> <p>Verify that owners or operators of all sources retain purchase orders and invoices for a period of at least 3 yr.</p> <p>Verify that owners or operators of all sources report to the Director any exceedance of a limit within one week of occurrence.</p> <p>Verify that owners or operators of all sources certify all submittals as to the truth, completeness, and accuracy of all information recorded and reported over the</p>

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	<p>signature of the appropriate official.</p> <p>Verify that copies of all required records are maintained at the facility and are available for inspection by personnel of the Division on demand.</p> <p>(NOTE: Potential emissions for a solvent cleaning operation exempted from needing a permit will be determined using actual emissions without accounting for any air pollution control devices to reduce emissions of volatile organic compounds or hazardous air pollutants including perchloroethylene, methyl chloroform, and methyl chloride from the coating operation, solvent cleaning operation or graphic arts operation. All volatile organic compounds and perchloroethylene, methyl chloroform, and methyl chloride are assumed to evaporate and be emitted into the atmosphere at the source.)</p> <p>(NOTE: These recording and reporting requirements do not apply to any facility whose potential emissions are greater than or equal to:</p> <ul style="list-style-type: none"> - 100 tons per yr of each regulated air pollutant - 10 tons per yr of each hazardous air pollutant - 25 tons per yr of all hazardous air pollutants combined. <p>These limits are determined by criteria set out in each individual source category rule. [A particular maximum achievable control technology (MACT) standard promulgated under 40 CFR Part 63 may have a lower applicability threshold than those contained here. The threshold contained in that MACT standard will be used to determine the applicability of that MACT standard.]</p> <p>Verify that the recordkeeping and reporting requirements below are met for a facility whose potential emissions meet the following limits:</p> <ul style="list-style-type: none"> - of volatile organic compounds are less than 100 tons per yr but more than or equal to 75 tons per year - of each hazardous air pollutant is less than 10 tons per yr but more than or equal to 7.5 tons per yr or - of all hazardous air pollutants combined are less than 25 tons per yr but more than or equal to 18 tons per year. <p>Verify that facilities with the potential emissions listed above maintain monthly consumption records of each material used containing volatile organic compounds as follows:</p> <ul style="list-style-type: none"> - quantity of volatile organic compound in lb per gal of each material used - lb of volatile organic compounds of each material used per mo and total lb of volatile organic compounds of each material used during the 12-mo period ending on that mo - quantity of each hazardous air pollutant in lb per gal of each material used - lb of each hazardous air pollutant of each material used per mo and total lb of each hazardous air pollutant of each material used during the 12-mo period ending on that mo - quantity of all hazardous air pollutants in lb per gal of each material used - lb of all hazardous air pollutants of each material used per mo and total lb of all hazardous air pollutants of each material used during the 12-mo period

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	<p>ending on that mo.</p> <p>Verify that a report containing the following information is submitted to the Director each quarter, or more frequently if required by a permit condition, summarizing emissions of volatile organic compounds and hazardous air pollutants:</p> <ul style="list-style-type: none"> - lb volatile organic compounds used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method - greatest quantity in lb of an individual hazardous air pollutant used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method - lb of all hazardous air pollutants used: <ul style="list-style-type: none"> - for each mo during the quarter, and - for each 12-mo period ending on each mo during the quarter using the 12-mo rolling average method. <p>Verify that the reporting requirements below are met for a facility whose potential emissions meet the following limits:</p> <ul style="list-style-type: none"> - of volatile organic compounds are less than 75 tons per year - of each hazardous air pollutants is less than 7.5 tons per year - of all hazardous air pollutants combined are less than 18 tons per year. <p>Verify that facilities with the potential emissions listed above submit to the regional supervisors of the appropriate Division regional office by March 1 of each year, or more frequently if required by a permit condition, a report summarizing emissions of volatile organic compounds and hazardous air pollutants containing the following:</p> <ul style="list-style-type: none"> - lb volatile organic compounds used during the previous calendar year - lb of the highest individual hazardous air pollutant used during the previous year - lb of all hazardous air pollutants used during the previous year. <p>Verify that owners or operators of all sources maintain purchase orders and invoices of materials containing volatile organic compounds (which will be made available to the Director upon request to confirm the general accuracy of the reports regarding materials usage).</p> <p>Verify that owners or operators of all sources retain purchase orders and invoices for a period of at least 3 yr.</p> <p>Verify that owners or operators of all sources report to the Director any exceedance of a limit within one week of occurrence.</p> <p>Verify that owners or operators of all sources certify all submittals as to the truth,</p>

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	<p>completeness, and accuracy of all information recorded and reported over the signature of the appropriate official.</p> <p>Verify that copies of all required records are maintained at the facility and are available for inspection by personnel of the Division on demand.</p>

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AE.130. OPEN BURNING AE.130.1.NC. Facilities must not engage in open burning of refuse or other combustible materials unless a permit has been issued (15A NCAC 2D.1901(c) and 2D.1903) [Revised March 2006].	Verify that the facility does not engage in the open burning unless a permit has been issued under the authority of the Commission or a duly certified local air pollution control program having jurisdiction. (NOTE: See Appendix 1-7 for a list of activities exempt from the open burning prohibition. However, open burning is prohibited for exempt activities 1, 2, 10, 11 and 12 listed in Appendix 1-7 when the air quality forecast area is forecasted to be an Air Quality Action Day Code 'Orange' or above.)	
AE.130.2.NC. [Moved March 2006].	(NOTE: Moved to AE.25.17.NC., March 2006.)	
AE.130.3.NC. [Moved March 2006].	(NOTE: Moved to AE.25.18.NC., March 2006.)	
AE.130.4.NC. [Moved March 2006].	(NOTE: Moved to AE.25.19.NC., March 2006.)	

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AE.135. VEHICLE EMISSIONS AE.135.1.NC. [Deleted March 2008]. AE.135.2.NC. Heavy-duty diesel vehicles manufactured in 2008 and later must meet specific emissions requirements (15A NCAC 2D.1009) [Added March 2005]. AE.135.3.NC. Heavy-duty vehicles must meet specific emissions requirements (15A NCAC 2D.1010) [Added March 2010].	<p>(NOTE: 15A NCAC 2D.1004 was repealed.)</p> <p>(NOTE: Military tactical vehicles and equipment as specified in Title 13 of the California Code of Regulations, Section 1905 are exempt from these requirements.)</p> <p>Verify that heavy duty diesel vehicles (model year 2008 or subsequent year) are certified by the California Air Resources Board as meeting the applicable model year requirements of Title 13 of the California Code of Regulations, Section 1956.8, California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles.</p> <p>Verify that heavy-duty vehicle operation does not cause or allow idling for a period of time in excess of 5 consecutive minutes in any 60 minute period.</p> <p>(NOTE: Heavy-duty vehicles located in a queue area are not exempted from this Rule.)</p> <p>(NOTE: The following exemptions to idle restrictions apply to this rule:</p> <ul style="list-style-type: none"> - heavy-duty vehicles may idle if they remain motionless due to traffic conditions, traffic control devices or signals, congestion, or at the direction of law enforcement officials - emergency vehicles may idle while performing an emergency or training function. This exemption does not apply when idling only for driver comfort - military vehicles - heavy-duty vehicles may idle main propulsion engines to operate power take offs to perform the heavy-duty vehicle's designed functions (e.g., refrigeration of cargo, processing of cargo, dumping, lifting, hoisting, drilling, mixing, loading, unloading, other operations requiring the use of power take offs) (This exemption does not apply when idling only for driver comfort.) - heavy-duty vehicles may idle if following manufacturer's recommendations for cold engine startup and engine cool-down, maintenance, inspection, servicing, repairing, or diagnostic purposes, if idling is required for such activity - heavy-duty vehicles with an occupied sleeper berth compartment may idle for the purposes of air conditioning or heating during federally mandated rest or sleep periods (This exemption shall expire on May 1,

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	<p>2011.)</p> <ul style="list-style-type: none"> - auxiliary power units - heavy-duty vehicles with a primary diesel engine meeting the nitrogen oxide idling emission standard in Title 13, of the California Code of Regulations, Section 1956.8(a)(6)(C) - a passenger bus when non-driver passengers are on board the vehicle and up to 20 minutes prior to passengers boarding - heavy-duty vehicles may idle to provide customer climate controlled comfort during periods of providing customer services (e.g., library bookmobile, blood mobile, safety shoe and safety glasses vendors) (This exemption does not apply when idling only for driver comfort.) - heavy-duty vehicles may idle if defrosters, heaters, air conditioners, or other equipment are operating solely to prevent a safety or health emergency. - heavy-duty farm vehicles.)

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<p>AE.140.</p> <p>MOBILE SOURCES</p> <p>AE.140.1.NC. Temporary crushers must meet specific requirements (15A.NCAC 2Q.0902) [Added March 2006; Revised March 2009].</p>	<p>(NOTE: This checklist item applies to portable crushers that meet the following requirements:</p> <ul style="list-style-type: none"> - crushes no more than 300,000 tons at any one facility or site - burns no more than 17,000 gallons of diesel fuel at any one facility or site if it uses: <ul style="list-style-type: none"> - a diesel-fired generator - a diesel engine to drive the crusher - does not operate at quarry that has an air permit - continuously uses water spray to control emissions from the crushers - does not operate at a facility that is requires t o have a mining permit issued by the Division of Land Resources.) <p>Verify that the owner or operator of a temporary crusher and any associated generators complies with the following</p> <ul style="list-style-type: none"> - 15A NCAC 02D .0510 (particulates from sand, gravel, or crushed stone operations) (see AE.155.9.NC.) - 15A NCAC 02D.0516 (sulfur dioxide emissions from combustion sources) (see AE.15.3.NC.) - 15A NCAC 02D.0521 (control of visible emissions) (see AE.9.2.NC., AE.9.3.NC., and AE.15.1.NC.) - 15A NCAC 02D.0524 (new source performance standards) (see Appendix 1-1) - 15A NCAC 02D.0535 (excess emissions reporting and malfunctions) (see AE.7.2.NC.) - 15A NCAC 02D.0540 (particulates from fugitive non-process dust emission sources) (see AE.65.1.NC.) - 15A NCAC 02D.1806 (control and prohibition of odorous emissions) (see AE.155.10.NC.). <p>Verify that the owner or operator of a temporary crusher does not cause or allow any material to be produced, handled, transported, or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent exceeding the ambient air quality standards beyond the property line for particulate matter (PM2.5, PM10, and total suspended particulates).</p> <p>Verify that the owner or operator of a temporary crusher maintains records of the amount of material crushed and the quantity of fuel burned in the diesel-fired generator or engine.</p> <p>Verify that the owner or operator of a temporary crusher labels each crusher, hopper, feeder, screen, conveyor, elevator, and generator with a permanent and</p>

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	<p>unique identification number.</p> <p>Verify that, if a source is covered under 15A NCAC 02D .0524 (40 CFR Part 60, Subpart IIII), the owner or operator of a compression ignition internal combustion engine (CI ICE) for a temporary crusher submits to the Director notifications required under 15A NCAC 02D .0524 (40 CFR Part 60, Subpart IIII).</p> <p>(NOTE: If the Director or his authorized representative requests copies of notifications or testing records required under 15A NCAC 02D .0524 (40 CFR Part 60, Subpart IIII), the owner or operator of a compression ignition internal combustion engine (CI ICE) for temporary crusher shall submit the requested notifications or testing records within two business days of such a request.)</p> <p>Verify that, if the owner or operator of a crusher plans or has the design potential to operate a crusher at a facility or site for more than 12 months, he receives an air quality permit before beginning operations.</p>

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<p>AE.145.</p> <p>ASPHALT PAVING MATERIALS/ OPERATIONS</p> <p>AE.145.1.NC. Facilities conducting cutback asphalt paving and proposing to comply with emissions requirements by installing emission control equipment, replacing process equipment, or modifying existing process equipment must meet a specific compliance schedule (15A NCAC 2D.0909(c)) [Revised March 1998].</p> <p>AE.145.2.NC. Facilities mixing, storing, using, or applying cutback asphalt in specific counties must meet specific operating requirements (15A NCAC 2D.0902 and 2D.0931(c)) [Revised March 1998; Revised March 2004; Revised March 2009].</p>	<p>Verify that the facility submits a permit application and compliance schedule within 6 mo after the Director publishes notice in the North Carolina Register that an area is in violation of the ambient air quality standard for ozone.</p> <p>Verify that the compliance schedule contains the following increments of progress:</p> <ul style="list-style-type: none"> - a date by which contracts for the emission control system and process equipment is awarded or orders issued for purchase of component parts - a date by which onsite construction or installation of the emission control and process equipment begins - a date by which onsite construction or installation of the emission control and process equipment is completed. <p>Verify that final compliance with emissions requirements is achieved within 3 yr after the Director publishes notice in the North Carolina Register that an area is in violation of the ambient air quality standard for ozone.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>Verify that cutback asphalt is not mixed, stored, used, or applied, except where one of the following conditions applies:</p> <ul style="list-style-type: none"> - long-life (1 mo or more) stockpile storage is necessary - the use or application at ambient temperatures less than 50 deg F, as measured at the nearest National Weather Service Field Office or Federal Aviation Administration Station, is necessary - the cutback asphalt is to be used solely as a penetrating prime coat - the user can demonstrate to the Director that there are no VOC emissions under conditions of normal use. <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - gasoline service stations or gasoline dispensing facilities regardless of VOC emission levels - the source do not exceed 800 lb per calendar mo that are: <ul style="list-style-type: none"> - bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental

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	<p>compliance assessments</p> <ul style="list-style-type: none"> - bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratories - bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness - research and development laboratory activities provided the activity produces no commercial product or feedstock material <p>- VOC emissions during startup or shutdown operations from sources using incineration or other types of combustion to control VOC emissions whenever the off-gas contains an explosive mixture during startup or shutdown operation, if the exemption is approved by the Director.)</p> <p>(NOTE: This does apply to facilities with the potential to emit greater than or equal to 100 tons or more of volatile organic compounds per year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>

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<p>AE.155.</p> <p>OTHER EMISSIONS/SOURCES</p> <p>AE.155.1.NC. Industrial processes to which no other particulate emissions control standard applies must comply with general particulate emissions standards (15A NCAC 2D.0515) [Revised February 1999].</p> <p>AE.155.2.NC. Animal operations must implement specific management practices to control odors (15A NCAC 2D.1802 (c) and (f) [Added February 2000; Revised March 2001].</p>	<p>Verify that emissions of particulate matter from any stack, vent, or outlet of any industrial process for which no other emission control standards are applicable do not exceed the level calculated:</p> <ul style="list-style-type: none"> - for process weight rates less than or equal to 60,000 lb per h: with the equation $E = 4.10(P) [0.67]$ calculated to 3 significant figures - for process weight rates greater than 60,000 lb per h: with the equation $E = 55.0(P) [0.11] - 40$ calculated to 3 significant figures. <p>(NOTE: For the purpose of these equations, "E" equals the allowable emission rate for particulate matter in lb per h and "P" equals the process weight rate in tons per h.)</p> <p>(NOTE: "Process weight per h" means the total weight of all materials introduced into any specific process that may cause any emission of particulate matter. Solid fuels charged are considered as part of the process weight, but liquid and gaseous fuels and combustion air are not. For a cyclical or batch operation, the process weight per h is derived by dividing the total process weight by the number of h in one complete operation from the beginning of any given process to the completion thereof, excluding any time during which the equipment is idle. For a continuous operation, the process weight per h is derived by dividing the process weight for a typical period of time by the number of h in that typical period of time.)</p> <p>Verify that the carcasses of dead animals are disposed of within 24 h after becoming aware of the death of the animal according to the methods approved by the State Veterinarian for disposal of dead domesticated animals under G.S. 106-403.</p> <p>Verify that waste from animal wastewater application spray systems is applied in such a manner and under such conditions to prevent drift from the irrigation field of the wastewater spray beyond the boundary of the animal operation.</p> <p>(NOTE: Waste from application spray systems may be applied in an emergency to maintain safe lagoon freeboard if the owner or operator notifies the Department and resolves the emergency with the Department as written in Section III.6 of the Swine Waste Operation General Permit.)</p> <p>Verify that animal wastewater application spray system intakes are located near the liquid surface of the animal wastewater lagoon.</p> <p>Verify that ventilation fans are maintained according to the manufacturer's</p>

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<p>AE.155.3.NC. Animal operations must meet specific location requirements (15A NCAC 2D.1802 (e) [Added February 2000; Revised March 2001].</p>	<p>specifications.</p> <p>Verify that animal feed storage containers located outside of animal containment buildings are covered except when necessary to remove or add feed (this does not apply to the storage of silage or hay or to commodity boxes with roofs).</p> <p>(NOTE: The Director will respond to complaints to about objectionable odors.)</p> <p>(NOTE: For existing animal operations that do not meet the following siting requirements, the following is the location of the objectionable odor determination:</p> <ul style="list-style-type: none"> - at least 1500 ft from any occupied residence not owned by the owner of the animal operation - at least 2500 ft from any school, hospital, church, outdoor recreation facility, national park, State Park, historic property acquired by the State or listed in the North Carolina Register of Historic Places, or licensed child care center - at least 500 ft from any property boundary. <p>Objectionable odors will be determined at neighboring occupied property now owned by the owner of the animal operation, businesses, schools, hospitals, churches, outdoor recreation facilities, national parks, State Parks historic properties, or child care centers that are affected.)</p> <p>Verify that new animal operations meet the siting requirements listed above.</p> <p>(NOTE: Objectionable odors will be determined beyond the boundary of the animal operation.)</p>
<p>AE.155.4.NC. Specific swine operations must have odor management plans (15A NCAC 2D.1802 (d) [Added March 2001].</p>	<p>Verify that existing animal operations for swine that meet the criteria in Appendix 1-14 submit an odor management plan to the Director according to the schedule in the Appendix.</p> <p>Verify that the odor management plan describes how odors are currently being controlled and how these odors will be controlled in the future.</p> <p>(NOTE: The odor management plan shall contain the elements described in Rule .1803(a). The animal operation shall be required to submit its odor management plan only once.)</p> <p>Verify that all animal operations for swine that are of the size in Appendix 1-14 submit by the date specified in the Appendix either an odor management plan or documentation that no neighboring occupied property with an inhabitable structure, business, school, hospital, church, outdoor recreational facility, national park, State Park, historic property, or child care center is within the distances specified as of the date that the submittal is due.</p> <p>(NOTE: After July 15, 2002, the Director may require existing animal operations</p>

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<p>AE.155.5.NC. Existing animal operations found to be causing or contributing to an objectionable odor must meet requirements for best management plans (15A NCAC 2D.1802 (h)) [Added March 2001].</p>	<p>for swine with a steady state live weight of swine between 1,000 to 10,000 hundredweights to submit an odor management plan if the Director determines that these animal operations may cause or contribute to an objectionable odor.)</p> <p>Determine if the Director has found that an objectionable odor exists.</p> <p>Verify that a best management plan is submitted the Director as soon as practical, but not to exceed 90 days after receipt of written notification from the Director that the animal operation is causing or contributing to an objectionable odor.</p> <p>Verify that the operation is in compliance with the terms of the plan within 30 days after the Director approves the best management plan (compliance with an approved compliance schedule in the best management plan is deemed to be in compliance with the plan).</p> <p>(NOTE: If the Director determines that a plan submitted does not control objectionable odors from the animal operation, the Director will require the owner or operator of the animal operation to amend the plan to incorporate additional or alternative measures to control objectionable odors from the animal operation. The owner or operator shall:</p> <ul style="list-style-type: none"> - submit a revised best management plan to the Director as soon as practical but not later than 60 days of receipt of written notification from the Director that the plan is inadequate - be in compliance with the revised plan within 30 days after the Director approves the revisions to the best management plan (compliance with an approved compliance schedule in the best management plan is deemed to be in compliance with the plan).
<p>AE.155.6.NC. Existing animal operations found to be causing or contributing to an objectionable odor may be required to have control technology (15A NCAC 2D.1802 (k)) [Added March 2001].</p>	<p>(NOTE: If a plan failure occurs, the Director shall require the owner or operator of the animal operation to install control technology to control odor from the animal operation. The owner or operator shall submit within 90 days from receipt of written notification from the Director of a plan failure, a permit application for control technology and an installation schedule. If the owner or operator demonstrates to the Director that a permit application cannot be submitted within 90 days, the Director may extend the time for submittal up to an additional 90 days.)</p> <p>Verify that the owner or operator of the animal operation complies with all terms and conditions in the permit for control technology.</p> <p>Verify that the schedule for control technology containing the following increments of progress is met:</p> <ul style="list-style-type: none"> - a date by which contracts for odor control technology is awarded or orders are issued for purchase of component parts - a date by which on-site construction or installation of the odor control technology and equipment will begin

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<p>AE.155.7.NC. New or modified animal operations found to be causing or contributing to an objectionable odor may be required to have control technology (15A NCAC 2D.1802 (k)) [Added March 2001].</p>	<ul style="list-style-type: none"> - a date by which on-site construction or installation of the odor control technology and equipment is completed - a date by which final compliance is achieved. <p>Verify that control technology is in place and operating as soon as practical but not to exceed 12 mo from the date that the permit is issued for control technology.</p> <p>Verify that, before beginning construction, the owner or operator of a new or modified animal operation raising or producing swine has an approved best management plan.</p> <p>Verify that a house or lagoon that is a component of an animal operation is constructed:</p> <ul style="list-style-type: none"> - at least 1500 ft from any occupied residence not owned by the owner of the animal operation - at least 2500 ft from any school, hospital, church, outdoor recreation facility, national park, State Park, historic property, or child care center - at least 500 ft from any property boundary. <p>Verify that, for a new or modified animal operations raising or producing swine, the outer perimeter of the land area onto which waste is applied that is a component of an animal operation is:</p> <ul style="list-style-type: none"> - at least 75 ft from any boundary of property on which an occupied residence not owned by the owner of the animal operation is located, and - at least 200 ft from any occupied residence not owned by the owner of the animal operation.
<p>AE.155.8.NC. Animal operations found to be causing or contributing to an objectionable odor may be required to submit information to the Department (15A NCAC 2D.1804) [Added March 2001].</p>	<p>Verify that, if requested, the animal operation submits the following information:</p> <ul style="list-style-type: none"> - the name and location of the animal operation - the name, title, address, and telephone number of the person filing the report - the type and number of animals at the animal operation - potential sources of odors, such as animal housing structures, lagoons, collection and handling devices, and storage containers, with a physical description of these sources - waste water land application procedures - measures taken to reduce odors. <p>Verify that the above information is submitted to the Division within 15 days after receipt of the request.</p>

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AE.155.9.NC. Sand, gravel, or crushed stone operations must control particulate, fugitive non-process, and process emissions (15A NCAC 2D.0510) [Added March 2006].	<p>Verify that the owner or operator of a sand, gravel, or crushed stone operation do not cause, allow, or permit any material to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent exceeding the ambient air quality standards beyond the property line for particulate matter, both PM10 and total suspended particulates.</p> <p>(NOTE: The fugitive non-process dust emissions from sand, gravel, or crushed stone operations are controlled by Rule .0540 of this Section (this section requires a control plan after a second substantive complaint in a 12-month period.)</p> <p>Verify that the owner or operator of any sand, gravel, or crushed stone operation controls process-generated emissions:</p> <ul style="list-style-type: none"> - from crushers with wet suppression - from conveyors, screens, and transfer points, such that the applicable opacity standards in Rule .0521 (see AE9.2.NC. and AE.9.3.NC. or .0524 (New Source Performance Standards) are not exceeded.
AE.155.10.NC. Operations that produce odorous emissions that can cause or contribute to objectionable odors beyond a facility's boundary must meet management requirements (15A NCAC 2D.1806) [Added March 2006].	<p>(NOTE: These requirements do not apply to:</p> <ul style="list-style-type: none"> - processes at kraft pulp mills identified in Rule .0528 of this Section, and covered under Rule .0524 or .0528 of this Section - processes at facilities that produce feed-grade animal proteins or feed-grade animal fats and oils identified in and covered under Rule .0539 - motor vehicles and transportation facilities - all on-farm animal and agricultural operations, including dry litter operations and operations covered under Rule .1804 of this Section - municipal wastewater treatment plants and municipal wastewater handling systems - restaurants and food preparation facilities that prepare and serve food on site - single family dwellings not used for commercial purposes - materials odorized for safety purposes - painting operations that do not require a business license - all temporary activities or operations.) <p>Verify that the owner or operator of a facility implements management practices or installs and operates odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.</p> <p>(NOTE: If the Director determines that a source or facility subject to this Rule is emitting an objectionable odor, the Director shall require the owner or operator to implement maximum feasible controls for the control of odorous emissions.)</p> <p>Verify that, within 18 months after receiving written notification from the Director of the requirement to implement maximum feasible controls, maximum feasible controls and been installed and have begun operating.</p> <p>Verify that the owner or operator certifies to the Director within 5 days after the</p>

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	deadline for each increment of progress whether the required increment of progress has been met.

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<p>AE.160.</p> <p>COUNTY/CITY SPECIFIC REQUIREMENTS</p> <p>AE.160.1.NC. Sources of NO_x must meet emission requirements, according to a specific schedule, when the ambient air quality standard for ozone is exceeded (15A NCAC 2D.1402 (b) and (h), 2D.1403, and 2D.1405) [Revised March 1998; Revised March 2002; Citation Revised March 2003; Revised March 2010].</p>	<p>Verify that, if compliance with these NO_x requirements is to be achieved through a demonstration to certify compliance without source modification, the facility takes the following steps:</p> <ul style="list-style-type: none"> - notify the Director in writing within 6 mo after the Director's notice that the source is in compliance with the applicable RACT limitation or RACT standard - perform any required testing within 12 mo after the Director's notice to demonstrate compliance with the applicable RACT limitation - implement any required recordkeeping and reporting requirements within 12 mo after the Director's notice to demonstrate compliance with the applicable RACT standard. <p>Verify that, if compliance with these NO_x requirements is to be achieved through installation of combustion modification technology or other source modification, the following steps are taken:</p> <ul style="list-style-type: none"> - submit a permit application and a compliance schedule within 6 mo after the Director's notice in the North Carolina Register with the following increments of progress: <ul style="list-style-type: none"> - date by which contracts for installation of the modification are awarded or orders issued for purchase of component parts - date by which installation of the modification begins - date by which installation of the modification is completed - if the source is subject to a RACT limitation, a date by which compliance testing is completed - achieve final compliance within 3 yr after the Director's notice unless the facility petitions the Director for an alternative RACT limitation; if such a petition is made, final compliance is achieved within 4 yr after the Director's notice. <p>Verify that, if compliance with these NO_x requirements is to be achieved through the implementation of an emissions averaging plan (see Appendix 1-9), the facility takes the following steps:</p> <ul style="list-style-type: none"> - abide by applicable requirements for those planning to show compliance through demonstration or achieve it through installation of combustion modification technology for certification or modification of each source to be included under the averaging plan - submit a plan to implement an emissions averaging plan within 6 mo after the Director's notice in the North Carolina Register - achieve final compliance within 1 yr after the Director's notice unless implementation of the emissions averaging plan requires modification of one

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		<p>or more of the emissions averaging sources; if modification is required, final compliance is achieved within 3 yr.</p> <p>Verify that, if compliance with these NO_x requirements is to be achieved through implementation of seasonal fuel switching program (see Appendix 1-10), the facility takes the following steps:</p> <ul style="list-style-type: none"> - make all necessary modifications in accordance with the steps required to meet compliance through installation of combustion modification technology - include a plan for complying with the requirements for seasonal fuel switching with the permit application - achieve final compliance within 3 yr after the Director's notice in the North Carolina Register. <p>Verify that the facility does not build, erect, install, or use any article, machine, equipment, process, or method which conceals an emission which would otherwise constitute a violation of an applicable rule, including:</p> <ul style="list-style-type: none"> - the use of gaseous diluent to achieve compliance - piecemeal carrying out of an operation to avoid coverage by a rule that applies only to operations larger than a specified size. <p>(NOTE: Section 2D.1400 applies to all sources from 1 May through 30 September.)</p> <p>(NOTE: Section 2D.1400 does not apply to:</p> <ul style="list-style-type: none"> - any sources not required to obtain an air permit or is an insignificant activity (15 ACAC 02Q.0103(19) - any incinerator, or thermal or catalytic oxidizer used primarily for control of air pollution - emergency generators - emergency use internal combustion engines - a stationary internal combustion engine less than 2400 brake horsepower that operates no more than the following hours beginning 1 May and ending 30 September: <ul style="list-style-type: none"> - for diesel engines: 833,333 / t = ES - for natural gas-fired engines: 700,280 / t = ES (where t equals time in h and ES equals engine size in horsepower).) <p>(NOTE: See recordkeeping and reporting requirements in AE.7.2.NC. through AE.7.8.NC. Records determining compliance must be maintained for 5 years (15A 2D.1404).</p>
AE.160.2.NC.	[Deleted	
March 2002].		
AE.160.3.NC.	[Deleted	(NOTE: 15A NCAC 2D.1406 repealed.)

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<p>March 2003].</p> <p>AE.160.4.NC. Nonexempt boilers and indirect-fired process heaters, located in applicable counties that have exceeded ambient air quality standards for ozone must meet specific emissions requirements (15A NCAC 2D.1407) [Revised March 2001; Revised March 2002; Revised March 2003; Revised March 2008; Revised March 2010].</p>	<p>(NOTE: See AE.160.1.NC. for applicability and exceptions.)</p> <p>(NOTE: Rules .1407 applies to facilities with potential emissions of nitrogen oxides equal to or greater than 100 tons per year or 560 pounds per calendar day beginning May 1 through September 30 of any year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>Verify that a fossil fuel-fired boiler or indirect-fired process heater with a maximum heat input rate of less than or equal to 50 MBtu/h applies RACT by performing an annual tune-up.</p> <p>Verify that the tune-up is performed in accordance with the requirements found in Appendix 1-11.</p> <p>Verify that the facility maintain records of all tune-ups performed for each source, in accordance with the general recordkeeping requirements.</p> <p>Verify that a facility operating a fossil fuel-fired boiler with a maximum heat input rate less than or equal to 250 MBtu/h but greater than 50 MBtu/h, a boiler with a maximum heat input greater than 50 MBtu/hr that is not a fossil fuel-fired boiler, or an indirect-fired process heater with a maximum heat input greater than 50 million Btu per h applies RACT by either:</p> <ul style="list-style-type: none"> - installation of combustion modification technology or other NO_x control technology and maintenance, including annual tune-ups and recordkeeping - demonstration through source testing or continuous emission monitoring that the source complies with the applicable RACT limitation in Appendix 1-20. <p>(NOTE: If this becomes applicable to a boiler or indirect-fired process heater, and after reasonable effort the emissions are greater than the applicable limitation, or if the requirements of this Rule are not RACT for the particular boiler or indirect-fired process heater, the owner or operator may petition the Director for an alternative limitation or standard in accordance with Rule .1412.)</p> <p>Verify that compliance with the limitation established for a boiler or indirect-fired process heater is determined by:</p> <ul style="list-style-type: none"> - using a continuous emissions monitoring system for boilers or indirect-fired process heaters with a maximum heat input rate greater than 250 million Btu per h

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<p>AE.160.5.NC. Nonexempt stationary combustion turbines with a heat input rate greater than 100 MBtu/h but less than 250 Mbtu/h and located in applicable counties which have exceeded ambient air quality standards for ozone must meet specific emissions requirements (15A NCAC 2D.1408) [Revised March 2001; Revised March 2002; Revised March 2003; Revised March 2010].</p>	<ul style="list-style-type: none"> - using a continuous emission monitoring system if the boiler or indirect-fired process heater is required to use a continuous emissions monitoring system under Rule .0524 of this Chapter or 40 CFR Part 60 to measure emissions of nitrogen oxides - using annual source testing according to Rule .1415 of this Section for boilers or indirect-fired process heaters with a maximum heat input rate less than or equal to 250 million Btu per h but greater than 50 million BTU per h. <p>(NOTE: If a source covered under this Rule that can burn more than one fuel, the owner or operator of the source may choose not to burn one or more of these fuels during the ozone season. If the owner or operator chooses not to burn a particular fuel, the sources testing required under this Rule shall not be required for that fuel.)</p> <p>(NOTE: See recordkeeping and reporting requirements in AE.7.2.NC. through AE.7.8.NC. Records determining compliance must be maintained for 5 years (15A 2D.1404).</p> <p>(NOTE: See AE.160.1.NC. for applicability and exceptions.)</p> <p>(NOTE: Rules .1408 applies to facilities with potential emissions of nitrogen oxides equal to or greater than 100 tons per year or 560 pounds per calendar day beginning May 1 through September 30 of any year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>Verify that the facility applies RACT by either:</p> <ul style="list-style-type: none"> - conducting emissions averaging (see Appendix 1-9) - maintaining NO_x emissions to below 75 ppm by volume corrected to 15 percent oxygen for gas-fired turbines and 95 ppm by volume corrected to 15 percent oxygen for oil-fired turbines. <p>Verify that, if necessary, the facility installs combustion modification technology or other NO_x control technology in order to comply with the applicable RACT limitation.</p> <p>(NOTE: If this Rule becomes applicable to a stationary combustion turbine and the emissions are greater than the applicable limitation after reasonable effort as defined in Rule .1401 of this Section, or if the requirements of this Rule are not RACT for the particular stationary combustion turbine, the owner or operator may petition the Director for an alternative limitation or standard.)</p> <p>Verify that compliance with the RACT limitation is determined by either:</p>

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<p>AE.160.6.NC. Nonexempt stationary internal combustion engines, as NO_x sources, with a rated capacity of 650 hp or more and located in applicable counties which have exceeded ambient air quality standards for ozone must meet specific emissions requirements (15A NCAC 2D.1409 (a), (b), (f), and (h)) [Revised March 2001; Revised March 2002; Citation Revised March 2005; Revised March 2008; Revised March 2010].</p>	<ul style="list-style-type: none"> - using a CEMS - using annual source testing for stationary gas turbines with a maximum heat input rate less than or equal to 250 MBtu/h. <p>(NOTE: If a source covered under this Rule that can burn more than one fuel, the owner or operator of the source may choose not to burn one or more of these fuels during the ozone season. If the owner or operator chooses not to burn a particular fuel, the sources testing required under this Rule shall not be required for that fuel.)</p> <p>(NOTE: See recordkeeping and reporting requirements in AE.7.2.NC. through AE.7.8.NC. Records determining compliance must be maintained for 5 years (15A 2D.1404).</p> <p>(NOTE: See AE.160.1.NC. for applicability and exceptions.)</p> <p>(NOTE: Rules .1409(b) applies to facilities with potential emissions of nitrogen oxides equal to or greater than 100 tons per year or 560 pounds per calendar day beginning May 1 through September 30 of any year in the following areas:</p> <ul style="list-style-type: none"> - Cabarrus County - Gaston County - Lincoln County - Mecklenburg County - Rowan County - Union County - Davidson Township and Coddle Creek Township in Iredell County.) <p>Verify that NO_x emissions from the stationary internal combustion engine do not exceed the applicable RACT limitations in Appendix 1-20.</p> <p>(NOTE: If this standard becomes applicable to a stationary internal combustion engine and emissions from a stationary internal combustion engine are greater than the applicable limitation, or if the requirements are not RACT for the particular stationary internal combustion engine, the owner or operator may petition the Director for an alternative RACT limitation or standard.)</p> <p>Verify that stationary internal combustion engines permitted to operate more than 475 hr during the ozone season demonstrate compliance with the RACT limitation using annual source testing.</p> <p>Verify that stationary internal combustion engines permitted to operate no more than 475 hr during the ozone season demonstrate compliance with the RACT limitation using source testing during the first ozone season of operation, and complete annual tune-ups every yr thereafter.</p> <p>(NOTE: See recordkeeping and reporting requirements in AE.7.2.NC. through AE.7.8.NC. Records determining compliance must be maintained for 5 years (15A</p>

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	2D.1404).

Appendix 1-1

Federal Regulations Incorporated by Reference

(15 NCAC 2D.0524, 2D.0530 and 2D.1110) [Revised February 2000; Revised March 2008; Revised March 2009]

2D.0524: New Source Performance Standards

a. With the exception of Paragraph (b) and (c) of this Rule, sources subject to new source performance standards promulgated in 40 CFR Part 60 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, as required therein, rather than with any otherwise-applicable rule in this Section which would be in conflict therewith.

b. The following is not included under this Rule:

1. 40 CFR Part 60, Subpart AAA (new residential wood heaters);
2. 40 CFR Part 60, Subpart B (adoption and submittal of state plans for designated facilities);
3. 40 CFR Part 60, Subpart C (emission guidelines and compliance times);
4. 40 CFR Part 60, Subpart Cb (guidelines for municipal waste combustors constructed on or before September 20, 1994);
5. 40 CFR Part 60, Subpart Cc (guidelines for municipal solid waste landfills);
6. 40 CFR Part 60, Subpart Cd (guidelines for sulfuric acid production units);
7. 40 CFR Part 60, Subpart Ce (guidelines for hospital, medical, infectious waste incinerators);
8. 40 CFR Part 60, Subpart BBBB (guidelines for small municipal waste combustion units constructed on or before August 30, 1999);
9. 40 CFR Part 60, Subpart DDDD (guidelines for commercial and industrial solid waste incinerators constructed on or before November 30, 1999);
10. 40 CFR Part 60, Subpart FFFF (guidelines for other solid waste incinerators constructed on or before December 9, 2004); or
11. 40 CFR Part 60, Subpart HHHH (guidelines for coal-fired electric steam generating units).

c. Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the new source performance standards promulgated under 40 CFR Part 60, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 months after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 months has elapsed after the end of the comment period on the proposed amendment.

d. New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 02D .0902 as being in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 60 that are not excluded by this Rule, as well as with any applicable requirements in Section .0900 of this Subchapter.

e. All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency.

f. In the application of this Rule, definitions contained in 40 CFR Part 60 shall apply rather than those of Section .0100 of this Subchapter.

g. With the exceptions allowed under 15A NCAC 02Q .0102, Activities Exempted from Permit Requirements, the owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 02Q .0300 or .0500.

2D.1110: NESHAPs

- a. With the exception of Paragraph (b) of this Rule, sources subject to national emission standards for hazardous air pollutants promulgated in 40 CFR Part 61 shall comply with emission standards, monitoring and reporting requirements, maintenance requirements, notification and record keeping requirements, performance test requirements, test method and procedural provisions, and any other provisions, rather than with any otherwise-applicable Rule in Section .0500 of this Subchapter which would be in conflict.
- b. Along with the notice appearing in the North Carolina Register for a public hearing to amend this Rule to exclude a standard from this Rule, the Director shall state whether or not the national emission standard for hazardous air pollutants promulgated under 40 CFR Part 61, or part thereof, shall be enforced. If the Commission does not adopt the amendment to this Rule to exclude or amend the standard within 12 mo after the close of the comment period on the proposed amendment, the Director shall begin enforcing that standard when 12 mo has elapsed after the end of the comment period on the proposed amendment.
- c. New sources of volatile organic compounds that are located in an area designated in 40 CFR 81.334 as nonattainment for ozone or an area identified in accordance with 15A NCAC 2D.0902(e), (f), or (g) as being in violation of the ambient air quality standard for ozone shall comply with the requirements of 40 CFR Part 61 that are not excluded by this Rule, as well as with any applicable requirements in Section .0900 of this Subchapter.
- d. All requests, reports, applications, submittals, and other communications to the administrator required under Paragraph (a) of this Rule shall be submitted to the Director of the Division of Air Quality rather than to the Environmental Protection Agency; except that all such reports, applications, submittals, and other communications to the administrator required by 40 CFR 61.145 shall be submitted to the Director, Division of Epidemiology.
- e. In the application of this Rule, definitions contained in 40 CFR Part 61 shall apply rather than those of Section .0100 of this Subchapter.
- f. 15A NCAC 2Q.0102 and .0302 are not applicable to any source to which this Rule applies. The owner or operator of the source shall apply for and receive a permit as required in 15A NCAC 2Q.0300 or .0500.

2D.0530: PSD

- a. The purpose of the Rule is to implement a program for the prevention of significant deterioration of air quality as required by 40 CFR 51.166.
- b. For the purposes of this Rule the definitions contained in 40 CFR 51.166(b) and 40 CFR 51.301 shall apply except the definition of "baseline actual emissions."
 1. "Baseline actual emissions" means the rate of emissions, in tons per year, of a regulated new source review (NSR) pollutant, as determined in accordance with Parts (A) through (C) of this Subparagraph:
 - A. For an existing emissions unit, baseline actual emissions means the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding the date that a complete permit application is received by the Division for a permit required under this Rule. The Director shall allow a different time period, not to exceed 10 years immediately preceding the date that a complete permit application is received by the Division, if the owner or operator demonstrates that it is more representative of normal source operation. For the purpose of determining baseline actual emissions, the following shall apply:
 - i. The average rate shall include fugitive emissions to the extent quantifiable, and emissions associated with startups, shutdowns, and malfunctions.
 - ii. The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above any emission limitation that was legally enforceable during the consecutive 24-month period.

- iii. For an existing emission unit (other than an electric utility steam generating unit), the average rate shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the major stationary source must currently comply. However, if the State has taken credit in an attainment demonstration or maintenance plan consistent with the requirements of 40 CFR 51.165(a)(3)(ii)(G) for an emission limitation that is part of a maximum achievable control technology standard that the Administrator proposed or promulgated under part 63 of the Code of Federal Regulations, the baseline actual emissions shall be adjusted to account for such emission reductions.
- iv. For an electric utility steam generating unit, the average rate shall be adjusted downward to reflect any emissions reductions under G. S. 143- 215.107D and for which cost recovery is sought pursuant to G. S. 62-133.6.
- v. For a regulated NSR pollutant, when a project involves multiple emissions units, only one consecutive 24-month period shall be used to determine the baseline actual emissions for all the emissions units being changed. A different consecutive 24-month period for each regulated NSR pollutant can be used for each regulated NSR pollutant.
- vi. The average rate shall not be based on any consecutive 24-month period for which there is inadequate information for determining annual emissions, in tons per year, and for adjusting this amount if required by Subparts (ii) and (iii) of this Part.

B. For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of such unit shall equal zero; and thereafter, for all other purposes, shall equal the unit's potential to emit.

C. For a plantwide applicability limit (PAL) for a stationary source, the baseline actual emissions shall be calculated for existing emissions units in accordance with the procedures contained in Part (A) of this Subparagraph, and for a new emissions unit in accordance with the procedures contained in Part (B) of this Subparagraph.

2. In the definition of "net emissions increase," the reasonable period specified in 40 CFR 51.166(b)(3)(ii) shall be seven years.

3. The limitation specified in 40 CFR 51.166(b)(15)(ii) shall not apply.

c. All areas of the State shall be classified as Class II except that the following areas are Class I:

- 1. Great Smoky Mountains National Park;
- 2. Joyce Kilmer Slickrock National Wilderness Area;
- 3. Linville Gorge National Wilderness Area;
- 4. Shining Rock National Wilderness Area;
- 5. Swanquarter National Wilderness Area.

d. Redesignations of areas to Class I or II may be submitted as state proposals to the Administrator of the Environmental Protection Agency (EPA), if the requirements of 40 CFR 51.166(g)(2) are met. Areas may be proposed to be redesignated as Class III, if the requirements of 40 CFR 51.166(g)(3) are met. Redesignations may not, however, be proposed which would violate the restrictions of 40 CFR 51.166(e). Lands within the boundaries of Indian Reservations may be redesignated only by the appropriate Indian Governing Body.

e. In areas designated as Class I, II, or III, increases in pollutant concentration over the baseline concentration shall be limited to the values set forth in 40 CFR 51.166(c). However, concentration of the pollutant shall not exceed standards set forth in 40 CFR 51.166(d).

f. Concentrations attributable to the conditions described in 40 CFR 51.166(f)(1) shall be excluded in determining compliance with a maximum allowable increase. However, the exclusions referred to in 40 CFR 51.166(f)(1)(i) or (ii) shall be limited to five years as described in 40 CFR 51.166(f)(2).

g. Major stationary sources and major modifications shall comply with the requirements contained in 40 CFR 51.166(i) and (a)(7) and by extension in 40 CFR 51.166(j) through (o) and (w). The transition provisions allowed by 40 CFR 52.21 (i)(11)(i) and (ii) and (m)(1)(vii) and (viii) are hereby adopted under this Rule. The minimum requirements described in the portions of 40 CFR 51.166 referenced in this Paragraph are hereby adopted as the requirements to be used under this Rule, except as otherwise provided in this Rule. Wherever the language of the portions of 40 CFR 51.166 referenced in this Paragraph speaks of the "plan," the requirements described therein shall apply to the source to which they pertain, except as otherwise provided in this Rule. Whenever the portions of 40 CFR 51.166 referenced in this Paragraph provide that the State plan may exempt or not apply certain requirements in certain circumstances, those exemptions and provisions of nonapplicability are also hereby adopted under this Rule. However, this provision shall not be interpreted so as to limit information that may be requested from the owner or operator by the Director as specified in 40 CFR 51.166(n)(2).

h. New natural gas-fired electrical utility generating units shall install best available control technology for NOX and SO2.

i. 40 CFR 51.166(w)(10)(iv)(a) is changed to read: "If the emissions level calculated in accordance with Paragraph (w)(6) of this Section is equal to or greater than 80 percent of the PAL [plant wide applicability limit] level, the Director shall renew the PAL at the same level." 40 CFR 51.166(w)(10)(iv)(b) is not incorporated by reference.

j. 15A NCAC 2Q .0102 and .0302 are not applicable to any source to which this Rule applies. The owner or operator of the sources to which this Rule applies shall apply for and receive a permit as required in 15A NCAC 2Q .0300 or .0500.

k. When a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification to emit a pollutant, such as a restriction on hours of operation, then the provisions of this Rule shall apply to the source or modification as though construction had not yet begun on the source or modification.

l. The provisions of 40 CFR 52.21(r)(2) regarding the period of validity of approval to construct are incorporated by reference except that the term "Administrator" is replaced with "Director".

m. Volatile organic compounds exempted from coverage in 40 CFR 51.100(s) shall also be exempted when calculating source applicability and control requirements under this Rule.

n. The degree of emission limitation required for control of any air pollutant under this Rule shall not be affected in any manner by:

1. that amount of a stack height, not in existence before December 31, 1970, that exceeds good engineering practice; or
2. any other dispersion technique not implemented before then.

o. A substitution or modification of a model as provided for in 40 CFR 51.166(l) shall be subject to public comment procedures in accordance with the requirements of 40 CFR 51.102.

p. Permits may be issued on the basis of innovative control technology as set forth in 40 CFR 51.166(s)(1) if the requirements of 40 CFR 51.166(s)(2) have been met, subject to the condition of 40 CFR 51.166(s)(3), and with the allowance set forth in 40 CFR 51.166(s)(4).

q. If a source to which this Rule applies impacts an area designated Class I by requirements of 40 CFR 51.166(e), notice to EPA will be provided as set forth in 40 CFR 51.166(p)(1). If the Federal Land Manager presents a demonstration described in 40 CFR 51.166(p)(3) during the public comment period or public hearing to the Director and if the Director concurs with this demonstration, the permit application shall be denied. Permits may be issued on the basis that the requirements for variances as set forth in 40 CFR 51.166(p)(4), (p)(5) and (p)(7), or (p)(6) and (p)(7) have been satisfied.

r. A permit application subject to this Rule shall be processed in accordance with the procedures and requirements of 40 CFR 51.166(q). Within 30 days of receipt of the application, applicants shall be notified if the application is complete as to initial information submitted. Commencement of construction before full prevention of significant deterioration approval is obtained constitutes a violation of this Rule.

s. Approval of an application with regard to the requirements of this Rule shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of other rules of this Subchapter or Subchapter 2Q of this Title and any other requirements under local, state, or federal law.

t. When a source or modification subject to this Rule may affect the visibility of a Class I area named in Paragraph (c) of this Rule, the following procedures shall apply:

1. The Director shall provide written notification to all affected Federal Land Managers within 30 days of receiving the permit application or within 30 days of receiving advance notification of an application. The notification shall be at least 30 days prior to the publication of notice for public comment on the application. The notification shall include a copy of all information relevant to the permit application including an analysis provided by the source of the potential impact of the proposed source on visibility.
2. The Director shall consider any analysis concerning visibility impairment performed by the Federal Land Manager if the analysis is received within 30 days of notification. If the Director finds that the analysis of the Federal Land Manager fails to demonstrate to his satisfaction that an adverse impact on visibility will result in the Class I area, the Director shall provide in the notice of public hearing on the application, an explanation of his decision or notice as to where the explanation can be obtained.
3. The Director may require monitoring of visibility in or around any Class I area by the proposed new source or modification when the visibility impact analysis indicates possible visibility impairment.

u. If the owner or operator of a source is using projected actual emissions to avoid applicability of prevention of significant deterioration requirements, the owner or operator shall notify the Director of the modification before beginning actual construction. The notification shall include:

1. a description of the project,
2. identification of sources whose emissions could be affected by the project,
3. the calculated projected actual emissions and an explanation of how the projected actual emissions were calculated, including identification of emissions excluded by 40 CFR 51.166(b)(40)(ii)(c),
4. the calculated baseline actual emissions and an explanation of how the baseline actual emissions were 5. any netting calculations if applicable.

If upon reviewing the notification, the Director finds that the project will cause a prevention of significant deterioration evaluation, then the Director shall notify the owner or operator of his findings. The owner or operator shall not make the modification until it has received a permit issued pursuant to this Rule. If a permit revision is not required pursuant to this rule, the owner or operator shall maintain records of annual emissions in tons per year, on a calendar year basis related to the modifications for 10 years following resumption of regular operations after the change if the project involves increasing the emissions unit's design capacity or its potential to emit the regulated NSR pollutant; otherwise these records shall be maintained for five years following resumption of regular operations after the change. The owner or operator shall submit a report to the director within 60 days after the end of each year during which these records must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a) through (c). The owner or operator shall make the information documented and maintained under this Paragraph available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).

v. The reference to the Code of Federal Regulations (CFR) in this Rule are incorporated by reference unless a specific reference states otherwise. The version of the Code of Federal Regulations incorporated in this Rule is that as of June 13, 2007 except those provisions noticed as stayed in 69 FR 40274, and does not include any subsequent amendments or editions to the referenced material.

Appendix 1-2

[Deleted March 2007]

(NOTE: 15A NCAC 2H.0610 was repealed)

Appendix 1-3

Ambient Air Quality Standards

(Source: 15A NCAC 2D.0402, 2D.0403, 2D.0404, 2D.0405, 2D.0407, 2D.0408, 2D.0409, and 2D.0410)
[Revised March 2005; Revised March 2010]

SO_x

80 micrograms/m³ (0.03 ppm) annual arithmetic mean
365 micrograms/m³ (0.14 ppm) maximum 24-h concentration not to be exceeded more than once per year
1300 micrograms/m³ (0.5 ppm) maximum 3-h concentration not to be exceeded more than once per year

Total Suspended Particulates

75 micrograms/m³ annual geometric mean
150 micrograms/m³ maximum 24-h concentration not to be exceeded more than once a year

CO

9 ppm (10 mg/m³) maximum 8-h concentration not to be exceeded more than once a year
35 ppm (40 mg/m³) maximum 1-h average concentration not to be exceeded more than once a year

Ozone

0.075 ppm (235 microgram/m³)
(NOTE: The standard is attained at an ambient air quality monitoring site when the average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.075 parts per million (ppm) as determined by Appendix I of 40 CFR Part 50, or equivalent methods established under 40 CFR Part 53.)

NO_x

0.053 ppm (100 microgram/m³) annual arithmetic mean
(NOTE: The standards are attained when the annual arithmetic mean concentration in a calendar yr is less than or equal to 0.053 ppm, rounded to three decimal places.)

Lead

0.15 micrograms/m³. The standard is met when the maximum arithmetic three month mean concentration for a three year period, as determined in accordance with Appendix R of 40 CFR Part 50, is less than or equal to 0.15 micrograms per cubic meter.

Particulate Matter PM₁₀

150 micrograms/m³, 24-h average concentration. This standard is attained when 150 ug/m³, as determined according to Appendix N of 40 CFR Part 50, is not exceeded more than once per year on average over a three-year period.

Particulate Matter PM_{2.5}

15.0 micrograms per cubic meter (ug/m³), annual arithmetic mean concentration
35 micrograms per cubic meter (ug/m³), 24-hour average concentration.
(NOTE: These standards are attained when the annual arithmetic mean concentration is less than or equal to 15.0 ug/m³ and when the 98th percentile 24-hour concentration is less than or equal to 65 ug/m³, as determined according to Appendix N of 40 CFR Part 50.)

Appendix 1-4

Sources Subject to and Exempt from Permit Requirements

(Source: 15A NCAC 2Q.0101(a) and 2Q.0102)

[Revised March 1998; Revised February 2000; Revised March 2001; Revised March 2007;
Revised March 2008; Revised March 2009]

Sources Subject to Permit Requirements

Air quality permits are required to conduct any of the following activities:

1. Construct, operate, or modify a source subject to an applicable standard, requirement, or rule that emits any regulated pollutant or one or more of the following:

1. sulfur dioxide
2. total suspended particulates
3. particulate matter (PM₁₀)
4. CO
5. nitrogen oxides
6. volatile organic compounds (VOCs)
7. lead and lead compounds
8. fluorides
9. total reduced sulfur
10. reduced sulfur compounds
11. hydrogen sulfide
12. sulfuric acid mist
13. asbestos
14. arsenic and arsenic compounds
15. beryllium and beryllium compounds
16. cadmium and cadmium compounds
17. chromium(VI) and chromium(VI) compounds
18. mercury and mercury compounds
19. hydrogen chloride
20. vinyl chloride
21. benzene
22. ethylene oxide (EtO)
23. dioxins and furans
24. ozone
25. any toxic air pollutant listed in 15A NCAC 2D.1104(see Appendix 1-16)

2. Construct, operate, or modify a facility that has the potential to emit at least 10 ton/yr of any hazardous air pollutant (HAP) or 25 ton/yr of all HAPs combined or that are subject to requirements established under the following sections of the Federal Clean Air Act:

1. Section 112(d), emissions standards
2. Section 112(f), standards to protect public health and the environment
3. Section 112(g), construction and reconstruction
4. Section 112(h), work practice standards and other requirements
5. Section 112(i)(5), early reduction
6. Section 112(j), Federal failure to promulgate standards
7. Section 112(r), accidental releases

Activities Exempt from Permit Requirements (15A NCAC 2Q.0102)

(a) This Rule does not apply to facilities required to have a permit under Section .0500 of this Subchapter. This Rule applies only to permits issued under Section .0300 of this Subchapter.

(b) If a source is subject to any of the following rules, then the source is not exempted from permit requirements, and the exemptions in Paragraph (c) of this Rule do not apply:

- (1) new source performance standards under 15A NCAC 02D .0524 or 40 CFR Part 60, except when the following activities are eligible for exemption under Paragraph (c) of this Rule:
 - (A) 40 CFR Part 60, Subpart Dc, industrial, commercial, and institutional steam generating units;
 - (B) 40 CFR Part 60, Subparts K, Ka, or Kb, volatile organic liquid storage vessels;
 - (C) 40 CFR Part 60, Subpart AAA, new residential wood heaters; or
 - (D) 40 CFR Part 60, Subpart JJJ, petroleum dry cleaners; or
 - (E) 40 CFR Part 60, Subpart WWW, municipal solid waste landfills;
 - (F) 40 CFR Part 60, Subpart IIII, stationary compression ignition internal combustion engines; or
 - (G) 40 CFR Part 60, Subpart JJJJ, stationary spark ignition internal combustion engines
- (2) national emission standards for hazardous air pollutants under 15A NCAC 02D .1110 or 40 CFR Part 61, except asbestos demolition and renovation activities, which are eligible for exemption under Paragraph (c) of this Rule;
- (3) prevention of significant deterioration under 15A NCAC 02D .0530;
- (4) new source review under 15A NCAC 02D .0531 or .0532;
- (5) sources of volatile organic compounds subject to the requirements of 15A NCAC 02D .0900 that are located in Mecklenburg County according to 15A NCAC 02D .0902(e);
- (6) sources required to apply maximum achievable control technology (MACT) for hazardous air pollutants under 15A NCAC 02D .1109, .1111, .1112, or 40 CFR Part 63 that are required to have a permit under Section .0500 of this Subchapter;
- (7) sources at facilities subject to 15A NCAC 02D .1100. (If a source does not emit a toxic air pollutant for which the facility at which it is located has been modeled, it shall be exempted from needing a permit if it qualifies for one of the exemptions in Paragraph (c) of this Rule).

(c) The following activities do not need a permit or permit modification under Section .0300 of this Subchapter; however, the Director may require the owner or operator of these activities to register them under 15A NCAC 02D .0200:

- (1) activities exempted because of category:
 - (A) maintenance, upkeep, and replacement:
 - (i) maintenance, structural changes, or repairs which do not change the capacity of such process, fuel-burning, refuse-burning, or control equipment, and do not involve any change in quality or nature or increase in quantity of emission of regulated air pollutants;
 - (ii) housekeeping activities or building maintenance procedures, including painting buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners, sweeping, use and associated storage of janitorial products, or insulation removal;
 - (iii) use of office supplies, supplies to maintain copying equipment, or blueprint machines;
 - (iv) use of fire fighting equipment;
 - (v) paving parking lots; or
 - (vi) replacement of existing equipment with equipment of the same size, type, and function that does not result in an increase to the actual or potential emission of regulated air pollutants and that does not affect the compliance status, and with replacement equipment that fits the description of the existing equipment in the permit, including the application, such that the replacement equipment can be operated under that permit without any changes in the permit;
 - (B) air conditioning or ventilation: comfort air conditioning or comfort ventilating systems that do not transport, remove, or exhaust regulated air pollutants to the atmosphere;
 - (C) laboratory activities:

- (i) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;
- (ii) bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratories;
- (iii) bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness; or
- (iv) research and development laboratory activities provided the activity produces no commercial product or feedstock material;
- (D) storage tanks:
 - (i) storage tanks used solely to store fuel oils, kerosene, diesel, crude oil, used motor oil, lubricants, cooling oils, natural gas or liquefied petroleum gas;
 - (ii) storage tanks used to store gasoline or ethanol-based fuels for which there are no applicable requirements except Stage I controls under 15A NCAC 02D .0928;
 - (iii) storage tanks used solely to store inorganic liquids; or
 - (iv) storage tanks or vessels used for the temporary containment of materials resulting from an emergency response to an unanticipated release of hazardous materials;
- (E) combustion and heat transfer equipment:
 - (i) space heaters burning distillate oil, kerosene, natural gas, or liquefied petroleum gas operating by direct heat transfer and used solely for comfort heat;
 - (ii) residential wood stoves, heaters, or fireplaces;
 - (iii) hot water heaters which are used for domestic purposes only and are not used to heat process water;
- (F) wastewater treatment processes: industrial wastewater treatment processes or municipal wastewater treatment processes for which there are no applicable requirements;
- (G) gasoline distribution: gasoline service stations or gasoline dispensing facilities;
- (H) dispensing equipment: equipment used solely to dispense diesel fuel, kerosene, lubricants or cooling oils;
- (I) solvent recycling: portable solvent distillation systems used for on-site solvent recycling if:
 - (i) The portable solvent distillation system is not:
 - (I) owned by the facility, and
 - (II) operated at the facility for more than seven consecutive days; and
 - (ii) The material recycled is recycled at the site of origin;
- (J) processes:
 - (i) electric motor burn-out ovens with secondary combustion chambers or afterburners;
 - (ii) electric motor bake-on ovens;
 - (iii) burn-off ovens for paint-line hangers with afterburners;
 - (iv) hosiery knitting machines and associated lint screens, hosiery dryers and associated lint screens, and hosiery dyeing processes where bleach or solvent dyes are not used;
 - (v) blade wood planers planing only green wood;
- (K) solid waste landfills: municipal solid waste landfills (This Part does not apply to flares and other sources of combustion at solid waste landfills; these flares and other combustion sources are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph.);
- (L) miscellaneous:
 - (i) motor vehicles, aircraft, marine vessels, locomotives, tractors or other self-propelled vehicles with internal combustion engines;
 - (ii) non-self-propelled non-road engines, except generators, regulated by rules adopted under Title II of the Federal Clean Air Act (Generators are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph.);
 - (iii) portable generators regulated by rules adopted under Title II of the Federal Clean Air Act;
 - (iv) equipment used for the preparation of food for direct on-site human consumption;
 - (v) a source whose emissions are regulated only under Section 112(r) or Title VI of the Federal Clean Air Act;
 - (vi) exit gases from in-line process analyzers;
 - (vii) stacks or vents to prevent escape of sewer gases from domestic waste through plumbing traps;

- (viii) refrigeration equipment that is consistent with Section 601 through 618 of Title VI (Stratospheric Ozone Protection) of the Federal Clean Air Act, 40 CFR Part 82, and any other regulations promulgated by EPA under Title VI for stratospheric ozone protection, except those units used as or in conjunction with air pollution control equipment (A unit used as or in conjunction with air pollution control equipment is required to be permitted under 15A NCAC 02Q .0300 unless it qualifies for another exemption under this Paragraph);
- (ix) equipment not vented to the outdoor atmosphere with the exception of equipment that emits volatile organic compounds (Equipment that emits volatile organic compounds is required to be permitted under 15A NCAC 02Q .0300 unless it qualifies for another exemption under this Paragraph);
- (x) equipment that does not emit any regulated air pollutants;
- (xi) facilities subject only to a requirement under 40 CFR Part 63 (This Subpart does not apply when a control device is used to meet a MACT or GACT emission standard; a control device used to meet a MACT or GACT emission standard is required to be permitted under 15A NCAC 02Q .0300 unless it qualifies for another exemption under this Paragraph);
- (xii) sources for which there are no applicable requirements;
- (xiii) animal operations not required to have control technology under 15A NCAC 02D .1800 (If an animal operation is required to have control technology, it shall be required to have a permit under this Subchapter).

(2) activities exempted because of size or production rate:

(A) storage tanks:

- (i) above-ground storage tanks with a storage capacity of no more than 1100 gallons storing organic liquids with a true vapor pressure of no more than 10.8 pounds per square inch absolute at 70° F; or
- (ii) underground storage tanks with a storage capacity of no more than 2500 gallons storing organic liquids with a true vapor pressure of no more than 10.8 psi absolute at 70° F;

(B) combustion and heat transfer equipment:

- (i) fuel combustion equipment, except for internal combustion engines, firing exclusively kerosene, No. 1 fuel oil, No. 2 fuel oil, equivalent unadulterated fuels, or a mixture of these fuels or one or more of these fuels mixed with natural gas or liquefied petroleum gas with a heat input of less than:
 - (I) 10 million Btu per hour for which construction, modification, or reconstruction commenced after June 9, 1989; or
 - (II) 30 million Btu per hour for which construction, modification, or reconstruction commenced before June 10, 1989;
 (Internal combustion engines are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph);
- (ii) fuel combustion equipment, except for internal combustion engines, firing exclusively natural gas or liquefied petroleum gas or a mixture of these fuels with a heat input rating less than 65 million Btu per hour (Internal combustion engines are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph);
- (iii) space heaters burning waste oil if:
 - (I) The heater burns only oil that the owner or operator generates or used oil from do-it-yourself oil changers who generate used oil as household wastes;
 - (II) The heater is designed to have a maximum capacity of not more than 500,000 Btu per hour; and
 - (III) The combustion gases from the heater are vented to the ambient air;
- (iv) fuel combustion equipment with a heat input rating less than 10 million Btu per hour that is used solely for space heating except:
 - (I) space heaters burning waste oil, or
 - (II) internal combustion engines;
- (v) emergency use generators and other internal combustion engines not regulated by rules adopted under Title II of the Federal Clean Air Act, except self-propelled vehicles, that have a rated capacity of no more than:
 - (I) 680 kilowatts (electric) or 1000 horsepower for natural gas-fired engines;
 - (II) 1800 kilowatts (electric) or 2510 horsepower for liquefied petroleum gas-fired engines;

- (III) 590 kilowatts (electric) or 900 horsepower for diesel-fired or kerosene-fired engines; or
- (IV) 21 kilowatts (electric) or 31 horsepower for gasoline-fired engines;
- (Self-propelled vehicles with internal combustion engines are exempted under Subpart (1)(c)(L)(i) of this Paragraph.)
- (vi) portable generators and other portable equipment with internal combustion engines not regulated by rules adopted under Title II of the Federal Clean Air Act, except self-propelled vehicles, that operate at the facility no more than a combined 350 hours for any 365-day period provided the generators or engines have a rated capacity of no more than 750 kilowatt (electric) or 1100 horsepower each and provided records are maintained to verify the hours of operation (Self-propelled vehicles with internal combustion engines are exempted under Subpart (1)(c)(L)(i) of this Paragraph.);
- (vii) peak shaving generators that produce no more than 325,000 kilowatt-hours of electrical energy for any 12-month period provided records are maintained to verify the energy production on a monthly basis and on a 12-month basis;
- (C) gasoline distribution: bulk gasoline plants with an average daily throughput of less than 4000 gallons;
- (D) processes:
 - (i) graphic arts operations, paint spray booths or other painting or coating operations without air pollution control devices (water wash and filters that are an integral part of the paint spray booth are not considered air pollution control devices), and solvent cleaning operations located at a facility whose facility-wide actual emissions of volatile organic compounds are less than five tons per year (Graphic arts operations, coating operations, and solvent cleaning operations are defined in 15A NCAC 02Q .0803);
 - (ii) sawmills that saw no more than 2,000,000 board feet per year provided only green wood is sawed;
 - (iii) perchloroethylene dry cleaners that emit less than 13,000 pounds of perchloroethylene per year;
 - (iv) electrostatic dry powder coating operations with filters or powder recovery systems including electrostatic dry powder coating operations equipped with curing ovens with a heat input of less than 10,000,000 Btu per hour;
- (E) miscellaneous:
 - (i) any source whose emissions would not violate any applicable emissions standard and whose potential emissions of particulate, sulfur dioxide, nitrogen oxides, volatile organic compounds, and carbon monoxide before air pollution control devices, i.e., potential uncontrolled emissions, are each no more than five tons per year and whose potential emissions of hazardous air pollutants are below their lesser quantity cutoff except:
 - (I) storage tanks,
 - (II) fuel combustion equipment,
 - (III) space heaters burning waste oil,
 - (IV) generators, excluding emergency generators, or other non-self-propelled internal combustion engines,
 - (V) bulk gasoline plants,
 - (VI) printing, paint spray booths, or other painting or coating operations,
 - (VII) sawmills,
 - (VIII) perchloroethylene dry cleaners, or
 - (IX) electrostatic dry powder coating operations, provided that the total potential emissions of particulate, sulfur dioxide, nitrogen oxides, volatile organic compounds, and carbon monoxide from the facility are each less than 40 tons per year and the total potential emissions of all hazardous air pollutants are below their lesser quantity cutoff emission rates or provided that the facility has an air quality permit. (A source identified in Sub-subpart (I) through (IX) of this Part is required to be permitted under 15A NCAC 02Q . 0300 unless it qualifies for another exemption under this Paragraph);
 - (ii) any facility whose actual emissions of particulate, sulfur dioxide, nitrogen oxides, volatile organic compounds, and carbon monoxide before air pollution control devices, i.e., uncontrolled emissions, are each less than five tons per year, whose potential emissions of all hazardous air pollutants are below their lesser quantity cutoff emission rate, and none of whose sources would violate an applicable emissions standard;

- (iii) any source that only emits hazardous air pollutants that are not also a particulate or a volatile organic compound and whose potential emissions of hazardous air pollutants are below their lesser quantity cutoff emission rates; or
 - (iv) any incinerator covered under Subparagraph (c)(4) of 15A NCAC 02D . 1201;
- (F) case-by-case exemption: activities that the applicant demonstrates to the satisfaction of the Director:
 - (i) to be negligible in their air quality impacts;
 - (ii) not to have any air pollution control device; and
 - (iii) not to violate any applicable emission control standard when operating at maximum design capacity or maximum operating rate, whichever is greater.
- (d) Because an activity is exempted from being required to have a permit does not mean that the activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.
- (e) Emissions from stationary source activities identified in Paragraph (c) of this Rule shall be included in determining compliance with the toxic air pollutant requirements under 15A NCAC 02D .1100 or 02Q .0700 according to 15A NCAC 02Q .0702 (exemptions from air toxic permitting).
- (f) The owner or operator of a facility or source claiming an exemption under Paragraph (c) of this Rule shall provide the Director documentation upon request that the facility or source is qualified for that exemption.
- (g) If the Director finds that an activity exempted under Paragraph (c) of this Rule is in violation of or has violated a rule in 15A NCAC 02D, he shall revoke the permit exemption for that activity and require that activity to be permitted under this Subchapter if necessary to obtain or maintain compliance.

Appendix 1-5

Nonattainment Areas

(Source: 15A NCAC 2D.0531(c)) [Revised March 2006; Revised March 2009]

Ozone Nonattainment Areas - either of the following:

c. Applicability. 40 CFR 51.165(a)(2) is incorporated by reference. This Rule applies to the following areas:

1. Ozone Nonattainment Areas, to major stationary sources and major modifications of sources of volatile organic compounds or nitrogen oxides for which construction commences after the area in which the source is located is designated according to Part (A) or (B) of this Subparagraph:

A. areas designated in 40 CFR 81.334 as nonattainment for ozone, or

B. any of the following areas and in that area only when the Director notices in the North Carolina Register that the area is in violation of the ambient air quality standard for ozone:

- i. Charlotte/Gastonia, consisting of Mecklenburg and Gaston Counties; with the exception allowed under Paragraph (l) of this Rule;
- ii. Greensboro/Winston-Salem/High Point, consisting of Davidson, Forsyth, and Guilford Counties and that part of Davie County bounded by the Yadkin River, Dutchmans Creek, North Carolina Highway 801, Fulton Creek and back to Yadkin River; or
- iii. Raleigh/Durham, consisting of Durham and Wake Counties and Dutchville Township in Granville County.

Violations of the ambient air quality standard for ozone shall be determined according to 40 CFR 50.9.

2. Carbon Monoxide Nonattainment Areas. This Rule applies to major stationary sources and major modifications of sources of carbon monoxide located in areas designated in 40 CFR 81.334 as nonattainment for carbon monoxide and for which construction commences after the area in which the source is located is listed in 40 CFR 81.334 as nonattainment for carbon monoxide.

Appendix 1-6

Particulate Matter Emissions Limits for Incinerators

[Deleted March 2003]

Appendix 1-7

Activities Exempt from Open Burning Limitations

(Source: 15A NCAC 2D.1903 (b) and (c)) [Revised March 2005; Revised March 2006; Revised March 2008]

(b) The following types of open burning are permissible without a permit:

1. Open burning of leaves, tree branches or yard trimmings, excluding logs and stumps, if the following conditions are met:
 - A. The material burned originates on the premises of private residences and is burned on those premises
 - B. There are no public pickup services available
 - C. Nonvegetative materials, such as household garbage, lumber or any other synthetic materials are not burned
 - D. The burning is initiated no earlier than 8:00 a.m. and no additional combustible material is added to the fire between 6:00 p.m. on one day and 8:00 a.m. on the following day
 - E. The burning does not create a nuisance
 - F. Material is not burned when the Division of Forest Resources has banned burning for that area
2. Open burning for land clearing or right-of-way maintenance if the following conditions are met:
 - A. The wind direction at the time that the burning is initiated and the wind direction as forecasted by the National Weather Service during the time of the burning are away from any area, including public road within 250 ft of the burning as measured from the edge of the pavement or other roadway surface, which may be affected by smoke, ash, or other air pollutants from the burning
 - B. The location of the burning is at least 1000 ft from any dwelling, group of dwellings, or commercial or institutional establishment, or other occupied structure not located on the property on which the burning is conducted. The regional office supervisor shall grant exceptions to the setback requirements if:
 - i. a signed, written statement waiving objections to the open burning associated with the land clearing operation is obtained and submitted to and the exception granted by the regional office supervisor before the burning begins from a resident or an owner of each dwelling, commercial or institutional establishment, or other occupied structures within 1000 ft of the open burning site. In the case of a lease or rental agreement, the lessee or renter shall be the person from whom permission shall be gained prior to any burning
 - ii. an air curtain burner that complies with Rule .1904 is utilized at the open burning site. Factors that the regional supervisor shall consider in deciding to grant the except include: all the persons who need to sign the statement waiving the objection have signed it, the location of the burn and the type, amount and nature of the combustible substances. The regional supervisor shall not grant a waiver if a college, school, licensed day care, hospital, licensed rest home, or other similar institution is less than 1000 feet from the proposed burn site when such institution is occupied
 - C. Only land cleared plant growth is burned. Heavy oils, asphaltic materials such as shingles and other roofing materials, items containing natural or synthetic rubber, or any materials other than plant growth are not burned. However, kerosene, distillate oil, or diesel fuel may be used to start the fire
 - D. Initial burning begins only between the hours of 8:00 a.m. and 6:00 p.m., and no combustible material is added to the fire between 6:00 p.m. on one day and 8:00 a.m. on the following day
 - E. No fires are initiated or vegetation added to existing fires when the Division of Forest Resources has banned burning for that area.
 - F. Materials are not carried off-site or transported over public roads for pen burning unless the materials are carried off-site or transported over public roads to facilities permitted according to Rule .1904 of this Section for the operation of an air curtain burner at a permanent site
3. Camp fires and fires used solely for outdoor cooking and other recreational purposes, or for ceremonial occasions, or for human warmth and comfort and which do not create a nuisance and do not use synthetic materials or refuse or salvageable materials for fuel.
4. Fires purposely set to public or private forest land for forest management practices for which burning is acceptable to the Division of Forest Resources and which follows the smoke management plan as outlined in the Division of Forest Resources' smoke management program;.
5. Fires purposely set to agricultural lands for disease and pest control and fires set for other agricultural or apicultural practices for which burning is currently acceptable to the Department of Agriculture.

6. Fires purposely set for wildlife management practices for which burning is currently acceptable to the Wildlife Resource Commission.
7. Fires for the disposal of dangerous materials when it is the safest and most practical method of disposal.
8. Fires purposely set by manufacturers of fire extinguishing materials or equipment, testing laboratories, or other persons, for the purpose of testing or developing these materials or equipment in accordance with a standard qualification program.
9. Fires purposely set for the instruction and training of fire-fighting personnel, at permanent fire-fighting training facilities
10. Fires purposely set for the instruction and training of fire-fighting personnel when conducted under the supervision of or with the cooperation of one or more of the following agencies:
 - A. the Division of Forest Resources
 - B. the North Carolina Insurance Department
 - C. North Carolina technical institutes
 - D. North Carolina community colleges, including:
 - i. the North Carolina Fire College
 - ii. the North Carolina Rescue College
11. Fires not described in paragraph 9 or 10 of this appendix, purposely set for the instruction and training of fire-fighting personnel, provided that:
 - A. The regional office supervisor of the appropriate regional office and the Health Hazards Control Branch of the Division of Epidemiology (HHCB) have been notified according to the procedures and deadlines contained in the appropriate regional notification form. This form may be obtained by writing the appropriate regional office at the address in 15A NCAC 2D.1905 and requesting it, and
 - B. The regional office supervisor has granted permission for the burning. Factors that the regional office supervisor shall consider in granting permission for the burning include type, amount, and nature of combustible substances. The regional office supervisor shall not grant permission for the burning of salvageable items, such as insulated wire and electric motors or if the primary purpose of the fire is to dispose of synthetic materials or refuse. The regional office supervisor of the appropriate regional office shall not consider previously demolished structures as having training value. However, the regional office supervisor of the appropriate regional office may allow an exercise involving the burning of motor vehicles burned over a period of time by a training unit or by several related training units. Any deviations from the dates and times of exercises, including additions, postponements, and deletions, submitted in the schedule in the approved plan shall be communicated verbally to the regional office supervisor of the appropriate regional office at least 1 h before the burn is scheduled.
12. Fires for the disposal of material generated as a result of a natural disaster, such as tornado, hurricane, or flood, if the regional office supervisor grants permission for the burning. The person desiring to do the burning shall document and provide written notification to the regional office supervisor of the appropriate regional office that there is no other practical method of disposal of the waste. Factors that the regional office supervisor shall consider in granting permission for the burning include type, amount, location of the burning, and nature of combustible substances. The regional office supervisor shall not grant permission for the burning if the primary purpose of the fire is to dispose of synthetic materials or refuse or recovery of salvageable materials. Fires authorized under this Subparagraph shall comply with the conditions of Subparagraph (b)(2) of this Rule.

NOTE: The authority to conduct open burning under this appendix does not exempt or excuse any person from the consequences, damages, or injuries that may result from this conduct. It does not excuse or exempt any person from complying with all applicable laws, ordinances, rules, or orders of any other governmental entity having jurisdiction even though the open burning is conducted in compliance with this Section.

Appendix 1-8

CO and Hydrocarbon Standards for Motor Vehicles

(Source: 15A NCAC 2D.1004) [Revised March 2003].

Vehicle Class	Model Year	CO Standard At Idle (percent)	HC Standard At Idle (PPM)
Light-Duty Vehicle	1975 thru 1977	4.5	450
	1978 thru 1979	3.5	350
	1980	2.0	250
	1981 and later	1.2	220
Heavy-Duty Vehicle	1975 thru 1978	5.0	500
	1979 and 1995	4.0	400

Appendix 1-9

Emissions Averaging

(Source: 15A NCAC 2D.1410) [Revised March 2001]

(NOTE: This does not apply to sources covered under Rules .1416, .1417 and .1418 of this Section. Sources that have obtained an alternative limitation as provided by Rule .1412 of this Section or that apply seasonal fuel switching as provided by Rule .1411 of this Section are not eligible to participate in an emissions averaging plan under this Rule.)

An emission averaging plan may be used if the total NO_x emissions from the averaged set of sources based on the total heat input are equal to or less than the NO_x emissions that would have occurred if each source complied with the applicable RACT limitation.

To request approval of an emissions averaging plan, the facility submits a written request to the Director including the following information:

1. the name and location of the facility
2. information identifying each source to be included under the averaging plan
3. the maximum heat input rate for each source
4. the fuel or fuels combusted in each source
5. the maximum allowable NO_x emission rate proposed for each averaging source
6. a demonstration that the nitrogen oxide emissions of the sources being averaged when operated together at the maximum daily heat input rate, will be less than or equal to the NO(x) emissions if each source complied with the applicable limitation of this Section individually
7. an operational plan to provide reasonable assurance that the sources being averaged will satisfy Subparagraph (5) of this Paragraph when the combined maximum daily heat input rate is less than the permitted maximum heat input rate
8. the method to be used to determine the actual NO(x) emissions from each source.

Appendix 1-10

Seasonal Fuel Switching

(Source: 15A NCAC 2D.1411) [Revised March 2001; Revised March 2003]

(NOTE: This does not apply to sources covered under Rules .1416, .1417 and .1418 of this Section.)

- The facility operating a coal-fired or oil-fired boiler subject to NO_x requirements may elect to apply RACT through the seasonal combustion of natural gas in accordance. This option is not available to a boiler that used natural gas as its primary fuel in 1990 or has used natural gas as its primary fuel since 1990. Compliance with these seasonal fuel switching requirements does not remove or reduce any applicable requirement of the Acid Rain Program.
- The facility electing to comply with the NO_x requirements through the seasonal combustion of natural gas establish a NO_x emission limit beginning 1 October and ending 30 April that will result in annual NO_x emissions of less than or equal to the NO_x that would have been emitted if the source complied with the applicable RACT limitation for the combustion of coal for the entire calendar year. Compliance with these seasonal fuel switching requirements does not remove or reduce any applicable requirement of the Acid Rain Program.
- To comply with the NO_x requirements through the seasonal combustion of natural gas, the facility submits to the Director the following information:
 1. the name and location of the facility
 2. information identifying the source to use seasonal combustion of natural gas for compliance
 3. the maximum heat input rate for each source
 4. a demonstration that the source will comply with the applicable limitation for the combustion of coal during the ozone season
 5. demonstration that the source will comply with the NO_x emission limitation beginning October 1 and ending April 30; and
 6. a written statement from the natural gas supplier providing reasonable assurance that the fuel will be available beginning during the ozone season.

Appendix 1-11

Tune-Up Requirements

(Source: 15A NCAC 2D.1414) [Revised March 2002]

- When a tune-up to a boiler or indirect-fired process heater is required for compliance with this Section, the owner or operator shall at least annually, according to the manufacturers recommendations:
 1. inspects each burner and cleans or replaces any component of the burner as required
 2. inspects the flame pattern and makes any adjustments to the burner, or burners, necessary to optimize the flame pattern to minimize total emissions of NO_x and CO
 3. inspect the combustion control system to ensure proper operation and correct calibration of components that control the air to fuel ratio and adjust components to meet the manufacturers established operating parameters
 4. inspect any other component of the boiler or indirect-fired process heater and make adjustments or repairs as necessary to improve combustion efficiency.
- When a tune-up to a stationary internal combustion engine is required for compliance with this Section, the owner or operator shall at least annually inspect, adjust, and repair or replace according to the manufacturer's recommendation, the following, as equipped
 1. engine air cleaners, fuel filters, and water traps;
 2. turbochargers and superchargers;
 3. spark plugs;
 4. valve lash;
 5. ignition systems, including ignition coils and wiring;
 6. aftercooler cores;
 7. any other component of the engine as necessary to improve engine efficiency; and
 8. emission control systems.
- The facility performs the tune-up in accordance with a unit specific protocol approved by the Director before the tune-up is performed.
- The facility maintains records of tune-ups performed. The following information is included for each source:
 1. the date and time the tune-up started and ended
 2. the person responsible for performing the tune-up
 3. the checklist for inspection of the burner, flame pattern, combustion control system, and all other components of the boiler identified in the protocol, noting any repairs or replacements made
 4. for boilers and indirect-fired process heaters, the checklist for inspection of the burner, flame pattern, combustion control system, and all other components of the boiler or indirect-fired process identified in the protocol, noting any repairs or replacements made
 5. for stationary internal combustion engines, the checklist for engine air cleaners, turbochargers, sparkplugs, valve lash, ignition coils and wiring, aftercooler cores, and all other components of the engine identified in the protocol, noting any repairs or replacements made
 6. any stack gas analyses performed after the completion of all adjustments to show that the operating parameters of the boiler, indirect-fired process heater, or stationary internal combustion engine have been optimized with respect to fuel consumption and output; at a minimum these parameters shall be within the range established by the equipment manufacturer to ensure that the emission limitation for nitrogen oxides has not been exceeded
 7. any other information requested by the Director to show that the boiler, indirect-fired process heat, or stationary internal combustion engine is being operated and maintained in a manner to minimize the emissions of nitrogen oxides.

Appendix 1-12

Particulate Matter Emissions Limitations for Miscellaneous Industrial Processes

(Source: 15A NCAC 2D.0515) [Deleted February 1999]

Appendix 1-13

Toxic Air Pollutant Emission Limits

(Source: 15A NCAC 2Q.0702 and .0711)

[Added February 1999; Revised February 2000; March 2001; Revised March 2003;
Revised March 2006; Revised March 2007; Revised March 2009]

A permit to emit toxic air pollutants is required for any facility whose actual (or permitted if higher) rate of emissions from all sources are greater than any one of the following toxic air pollutant permitting emissions rates:

Permit Threshold Limits for Toxic Air Pollutants				
Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
acetaldehyde (75-07-0)				6.8
acetic acid (64-19-7)				0.96
acrolein (107-02-8)				0.02
acrylonitrile (107-13-1)	10			
ammonia (7664-41-7)				0.68
ammonium chromate (7788-98-9)		0.013		
ammonium dichromate (7789-09-5)		0.013		
aniline (62-53-3)			0.25	
arsenic and inorganic arsenic compounds	0.016			
asbestos (1332-21-4)	1.9×10^{-6}			
aziridine (151-56-4)		0.013		
benzene (71-43-2)	8.1			
benzidine and salts (92-87-5)	0.0010			
benzo(a)pyrene (50-32-8)	2.2			
benzyl chloride (100-44-7)			0.13	
beryllium (7440-41-7)	0.28			
beryllium chloride (7787-47-5)	0.28			
beryllium fluoride (7787-49-7)	0.28			
beryllium nitrate (13597-99-4)	0.28			
bioavailable chromate pigments, as chromium (VI) equivalent	0.0056			
bis-chloromethyl ether (542-88-1)	0.025			
bromine (7726-95-6)				0.052
1,3-butadiene (106-99-0)	11			
cadmium (7440-43-9)	0.37			
cadmium acetate (543-90-8)	0.37			
cadmium bromide (7789-42-6)	0.37			
calcium chromate (13765-19-0)	0.0056			
carbon disulfide (75-15-0)		3.9		
carbon tetrachloride (56-23-5)	460			
chlorine (7782-50-5)		0.79		0.23
chlorobenzene (108-90-7)		46		

Permit Threshold Limits for Toxic Air Pollutants				
Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
chloroform (67-66-3)	290			
chloroprene (126-99-8)		9.2	0.89	
chromic acid (7783-94-5)		0.013		
chromium (VI)	0.0056			
cresol (1319-77-3)			0.56	
p-dichlorobenzene (106-46-7)				16.8
dichlorodifluoromethane (75-71-8)		5200		
dichlorofluoromethane (75-43-4)		10		
di(2-ethylhexyl) phthalate (117-81-7)		0.63		
dimethyl sulfate (77-78-1)		0.063		
1,4-dioxane (123-91-1)		12		
epichlorohydrin (106-89-8)	5600			
ethyl acetate (141-78-6)			36	
ethylenediamine (107-15-3)		6.3	0.64	
ethylene dibromide (106-93-4)	27			
ethylene dichloride (107-06-2)	260			
ethylene glycol monoethyl ether (110-80-5)		2.5	0.48	
ethylene oxide (75-21-8)	1.8			
ethyl mercaptan (75-08-1)			0.025	
fluorides		0.34	0.064	
formaldehyde (50-00-0)				0.04
Hexachlorocyclopentadiene (77-47-4)		0.013	0.0025	
hexachlorodibenzo-p-dioxin (57653-85-7)	0.0051			
n-hexane (110-54-3)		23		
hexane isomers except n-hexane				92
hydrazine (302-01-2)		0.013		
hydrogen chloride (7647-01-0)				0.18
hydrogen cyanide (74-90-8)		2.9	0.28	
hydrogen fluoride (7664-39-3)		0.63		0.064
hydrogen sulfide (7783-06-4)				0.52
maleic anhydride (108-31-6)		0.25	0.025	
manganese and compounds		0.63		
manganese cyclopentadienyl tricarbonyl (12079-65-1)		0.013		
manganese tetroxide (1317-35-7)		0.13		
mercury, alkyl		0.0013		
mercury, aryl and inorganic compounds		0.013		
mercury, vapor (7439-97-6)		0.013		
methyl chloroform (71-55-6)		250		64
methylene chloride (75-09-2)	1600		0.39	

Permit Threshold Limits for Toxic Air Pollutants				
Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Systemic Toxicants lb/hr	Acute Irritants lb/hr
methyl ethyl ketone (78-93-3)		78		22.4
methyl isobutyl ketone (108-10-1)		52		7.6
methyl mercaptan (74-93-1)			0.013	
nickel carbonyl (13463-39-3)		0.013		
nickel metal (7440-02-0)		0.13		
nickel, soluble compounds, as nickel		0.013		
nickel subsulfide (12035-72-2)	0.14			
nitric acid (7697-37-2)				0.256
nitrobenzene (98-95-3)		1.3	0.13	
N-nitrosodimethylamine (62-75-9)	3.4			
pentachlorophenol (87-86-5)		0.063	0.0064	
perchloroethylene (127-18-4)	13000			
phenol (108-95-2)			0.24	
phosgene (75-44-5)		0.052		
phosphine (7803-51-2)				0.032
polychlorinated biphenyls (1336-36-3)	5.6			
potassium chromate (7789-00-6)		0.013		
potassium dichromate (7778-50-9)		0.013		
sodium chromate (7775-11-3)		0.013		
sodium dichromate (10588-01-9)		0.013		
strontium chromate (7789-06-2)	0.0056			
styrene (100-42-5)			2.7	
sulfuric acid (7664-93-9)		0.25	0.025	
tetrachlorodibenzo-p-dioxin (1746-01-6)	0.00020			
1,1,1,2-tetrachloro- 2,2-difluoroethane (76-11-9)		1100		
1,1,2,2-tetrachloro- 1,2-difluoroethane (76-12-0)		1100		
1,1,1,2-tetrachloroethane (79-34-5)	430			
toluene (108-88-3)		98		14.4
toluene diisocyanate, 2-4- (584-84-9) and 2-6- (91-08-7) isomers		0.003		
trichloroethylene (79-01-6)	4000			
trichlorofluoromethane (75-69-4)		140		
1,1,2-trichloro- 1,2,2-trifluoroethane (76- 13-1)				240
vinyl chloride (75-01-4)	26			
vinylidene chloride (75-35-4)		2.5		
xylene (1330-20-7)		57		16.4
zinc chromate (13530-65-9)	0.0056			

Appendix 1-14

Determination of Date for Odor Management Plans for Swine Operations

(Source: 15A NCAC 2D.1802 (d))

100 lb steady state live weight of swine at least but less than	Distance* in ft to the boundary of the nearest neighboring occupied property with an inhabitable structure, business, school, hospital, church, outdoor recreation facility, national park, State Park, historic property, or child care center.	Date by when the odor management plan is to be submitted
10,000 20,000	less than or equal to 3,000	January 15, 2002
20,000 40,000	less than or equal to 4,000	July 15, 2001
40,000	less than or equal to 5,000	January 15, 2001

*The distance will be measured from the edge of the barn or lagoon, whichever is closer, to the boundary of the neighboring occupied property with an inhabitable structure, business, school, hospital, church, outdoor recreational facility, national park, State Park, historic property, or child care center.

Appendix 1-15

Emission Standards for HMIWIs

(Source: 15A NCAC 2D.1206 (c)) [Added March 2001; Revised March 2005]

(NOTE: The numbering of the regulation has been preserved.)

(c) Emission Standards

(1) The emission standards in this Rule apply to all incinerators subject to this Rule except where Rule .0524, .1110, or .1111 of this Subchapter applies. However, in any event, Subparagraphs (13) or (14) of this Paragraph shall control.

(2) Particulate Matter.

(A) Emissions of particulate matter from a HMIWI shall not exceed:

Incinerator Size	Allowable Emission Rate (mg/ dscm) [corrected to seven percent oxygen]
Small	115
Medium	69
Large	34

(B) Emissions of hydrogen chloride from any small remote HMIWI shall not exceed 3100 parts per million by volume corrected to seven percent oxygen (dry basis). Co(B) Emissions of particulate matter from any small remote HMIWI shall not exceed 197 milligrams per dry standard cubic meter, corrected to seven percent oxygen.

(3) Visible Emissions. On and after the date on which the initial performance test is completed, the owner or operator of any HMIWI shall not cause to be discharged into the atmosphere from the stack of the HMIWI any gases that exhibit greater than 10 percent opacity (6-minute block average).

(4) Sulfur Dioxide. Emissions of sulfur dioxide from any HMIWI shall not exceed 55 parts per million corrected to seven percent oxygen (dry basis).

(5) Nitrogen Oxide. Emissions of nitrogen oxides from any HMIWI shall not exceed 250 parts per million by volume corrected to seven percent oxygen (dry basis).

(6) Carbon Monoxide. Emissions of carbon monoxide from any HMIWI shall not exceed 40 parts per million by volume, corrected to seven percent oxygen (dry basis).

(7) Odorous Emissions. Any incinerator subject to this Rule shall comply with Rule .0522 of this Subchapter for the control of odorous emissions.

(8) Hydrogen Chloride.

(A) Emissions of hydrogen chloride from any small, medium, or large HMIWI shall be reduced by at least 93 percent by weight or volume or to no more than 100 parts per million by volume corrected to seven percent oxygen (dry basis), whichever is less stringent. Compliance with this Part shall be determined by averaging emissions over a one-h period.

(B) Emissions of hydrogen chloride from any small remote HMIWI shall not exceed 3100 parts per million by volume corrected to seven percent oxygen (dry basis). Compliance with this Part shall be determined by averaging emissions over a one-hour period.

(9) Mercury Emissions.

- (A) Emissions of mercury from any small, medium, or large HMIWI shall be reduced by at least 85 percent by weight or shall not exceed 0.55 milligrams per dry standard cubic meter, corrected to seven percent oxygen, whichever is less stringent. Compliance with this Part shall be determined by averaging emissions over a one-h period.
 - (B) Emissions of mercury from any small remote HMIWI shall not exceed 7.5 milligrams per dry standard cubic meter, corrected to seven percent oxygen. Compliance with this Part shall be determined by averaging emissions over a one-h period.
- (10) Lead Emissions.
- (A) Emissions of lead from any small, medium, or large HMIWI shall be reduced by at least 70 percent by weight or shall not exceed 1.2 milligrams per dry standard cubic meter, corrected to seven percent oxygen, whichever is less stringent.
 - (B) Emissions of lead from any small remote HMIWI shall not exceed 10 milligrams per dry standard cubic meter, corrected to seven percent oxygen.
- (11) Cadmium Emissions.
- (A) Emissions of cadmium from any small, medium, or large HMIWI shall be reduced by at least 65 percent by weight or shall not exceed 0.16 milligrams per dry standard cubic meter, corrected to seven percent oxygen, whichever is less stringent.
 - (B) Emissions of cadmium from any small remote HMIWI shall not exceed 4 milligrams per dry standard cubic meter, corrected to seven percent oxygen.
- (12) Dioxins and Furans.
- (A) Emissions of dioxins and furans from any small, medium, or large HMIWI shall not exceed 125 nanograms per dry standard cubic meter total dioxins and furans, corrected to seven percent oxygen or 2.3 nanograms per dry standard cubic meter (total equivalency), corrected to seven percent oxygen.
 - (B) Emissions of dioxins and furans from any small remote HMIWI shall not exceed 800 nanograms per dry standard cubic meter total dioxins and furans, corrected to seven percent oxygen or 15 nanograms per dry standard cubic meter (total equivalency), corrected to seven percent oxygen.
- (13) Toxic Emissions. The owner or operator of any incinerator subject to this Rule shall demonstrate compliance with Section .1100 of this Subchapter according to 15A NCAC 2Q.0700.
- (14) Ambient Standards.
- (A) In addition to the ambient air quality standards in Section .0400 of this Subchapter, the following ambient air quality standards, which are an annual average, in milligrams per cubic meter at 77°F (25°C) and 29.92 inches (760 mm) of mercury pressure, and which are increments above background concentrations, shall apply aggregately to all incinerators at a facility subject to this Rule:
 - (i) arsenic and its compounds 2.3×10^{-7}
 - (ii) beryllium and its compounds 4.1×10^{-6}
 - (iii) cadmium and its compounds 5.5×10^{-6}
 - (iv) chromium (VI) and its compounds 8.3×10^{-8}
 - (B) When Subparagraph (1) of this Paragraph and Rule .0524, .1110, or .1111 of this Subchapter regulate the same pollutant, the more restrictive provision for each pollutant shall apply, notwithstanding provisions of Rule .0524, .1110, or .1111 of this Subchapter to the contrary.
 - (C) The owner or operator of a facility with incinerators subject to this Rule shall demonstrate compliance with the ambient standards in Subparts (i) through (iv) of Part (A) of this Subparagraph by following the procedures set out in Rule .1106 of this Subchapter. Modeling demonstrations shall comply with the requirements of Rule .0533 of this Subchapter.
 - (D) The emission rates computed or used under Part (C) of this Subparagraph that demonstrate compliance with the ambient standards under Part (A) of this Subparagraph shall be specified as a permit condition for the facility with incinerators subject to this Rule as their allowable emission limits unless Rule .0524, .1110, or .1111 of this Subchapter requires more restrictive rates.

Appendix 1-16

Toxic Air Pollutant Guidelines

(Source: 15A NCAC 2D.1104) [Added March 2005]

A facility shall not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the premises (adjacent property boundary) to any significant ambient air concentration that may adversely affect human health. In determining these significant ambient air concentrations, the Division shall be guided by the following list of acceptable ambient levels in milligrams per cubic meter at 77@deg; F (25@deg; C) and 29.92 inches (760 mm) of mercury pressure (except for asbestos):

Pollutant (CAS Number)	Annual (Carcinogens)	24-Hour (Chronic Toxicants)	1-Hour (Acute Systemic Toxicants)	1-Hour (Acute Irritants)
acetaldehyde (75-07-0)				27
acetic acid (64-19-7)				3.7
acrolein (107-02-8)				0.08
acrylonitrile (107-13-1)	1.5 x 10 ^[-4]			
ammonia (7664-41-7)				2.7
aniline (62-53-3)			1	
arsenic and inorganic arsenic compounds	2.3 x 10 ^[-7]			
asbestos (1332-21-4)	2.8 x 10 ^[-11] fibers/ml			
aziridine (151-56-4)		0.006		
benzene (71-43-2)	1.2 x 10 ^[-4]			
benzidine and salts (92-87-5)	1.5 x 10 ^[-8]			
benzo(a)pyrene (50-32-8)	3.3 x 10 ^[-5]			
benzyl chloride (100-44-7)			0.5	
beryllium (7440-41-7)	4.1 x 10 ^[-6]			
beryllium chloride (7787-47-5)	4.1 x 10 ^[-6]			
beryllium fluoride (7787-49-7)	4.1 x 10 ^[-6]			
beryllium nitrate (13597-99-4)	4.1 x 10 ^[-6]			
bioavailable chromate pigments, as chromium (VI) equivalent	8.4 x 10 ^[-8]			
bis-chloromethyl ether (542-88-1)	3.7 x 10 ^[-7]			
bromine (7726-95-6)				0.2
1,3-butadiene (106-99-0)	1.7 x 10 ^[-4]			
cadmium (7440-43-9)	5.5 x 10 ^[-6]			
cadmium acetate (543-90-8)	5.5 x 10 ^[-6]			
cadmium bromide (7789-42-6)	5.5 x 10 ^[-6]			
carbon disulfide (75-15-0)		0.186		
carbon tetrachloride (56-23-5)	6.7 x 10 ^[-3]			
chlorine (7782-50-5)		0.0375		0.9
chlorobenzene (108-90-7)		2.2		
chloroform (67-66-3)	4.3 x 10 ^[-3]			
chloroprene (126-99-8)		0.44	3.5	
cresol (1319-77-3)			2.2	
p-dichlorobenzene (106-46-7)				66
dichlorodifluoromethane (75-71-8)		248		
dichlorofluoromethane (75-43-4)		0.5		
di(2-ethylhexyl) phthalate (117-81-7)		0.03		
dimethyl sulfate (77-78-1)		0.003		
1,4-dioxane (123-91-1)		0.56		
epichlorohydrin (106-89-8)	8.3 x 10 ^[-2]			

Pollutant (CAS Number)	Annual (Carcinogens)	24-Hour (Chronic Toxicants)	1-Hour (Acute Systemic Toxicants)	1-Hour (Acute Irritants)
ethyl acetate (141-78-6)			140	
ethylenediamine (107-15-3)		0.3	2.5	
ethylene dibromide (106-93-4)	4.0 x 10 ^[-4]			
ethylene dichloride (107-06-2)	3.8 x 10 ^[-3]			
ethylene glycol monoethyl ether (110-80-5)		0.12	1.9	
ethylene oxide (75-21-8)	2.7 x 10 ^[-5]			
ethyl mercaptan (75-08-1)			0.1	
fluorides		0.016	0.25	
formaldehyde (50-00-0)				0.15
hexachlorocyclopentadiene (77-47-4)		0.0006	0.01	
hexachlorodibenzo-p-dioxin (57653-85-7)	7.6 x 10 ^[-8]			
n-hexane (110-54-3)		1.1		
hexane isomers except n-hexane				360
hydrazine (302-01-2)		0.0006		
hydrogen chloride (7647-07-0)				0.7
hydrogen cyanide (74-90-8)		0.14	1.1	
hydrogen fluoride (7664-39-3)		0.03		0.25
hydrogen sulfide (7783-06-4)			0.12	
maleic anhydride (108-31-6)		0.012	0.1	
manganese and compounds		0.031		
manganese cyclopentadienyl		0.0006		
tricarbonyl (12079-65-1)				
manganese tetroxide (1317-35-7)		0.0062		
mercury, alkyl		0.00006		
mercury, aryl and inorganic compounds		0.0006		
mercury, vapor (7439-97-6)		0.0006		
methyl chloroform (71-55-6)		12		245
methylene chloride (75-09-2)	2.4 x 10 ^[-2]		1.7	
methyl ethyl ketone (78-93-3)		3.7		88.5
methyl isobutyl ketone (108-10-1)		2.56		30
methyl mercaptan (74-93-1)			0.05	
nickel carbonyl (13463-39-3)		0.0006		
nickel metal (7440-02-0)		0.006		
nickel, soluble compounds, as nickel		0.0006		
nickel subsulfide (12035-72-2)	2.1 x 10 ^[-6]			
nitric acid (7697-37-2)				1
nitrobenzene (98-95-3)		0.06	0.5	
N-nitrosodimethylamine (62-75-9)	5.0 x 10 ^[-5]			
non-specific chromium (VI)	8.3 x 10 ^[-8]			
compounds, as chromium (VI)		0.003	0.025	
pentachlorophenol (87-86-5)				
perchloroethylene (127-18-4)	1.9 x 10 ^[-1]			
phenol (108-95-2)			0.95	
phosgene (75-44-5)		0.0025		
phosphine (7803-51-2)				0.13
polychlorinated biphenyls (1336-36-3)	8.3 x 10 ^[-5]			
soluble chromate compounds, as chromium (VI) equivalent		6.2 x 10 ^[-4]		
styrene (100-42-5)			10.6	
sulfuric acid (7664-93-9)		0.012	0.1	
tetrachlorodibenzo-p-dioxin (1746-01-6)	3.0 x 10 ^[-9]			

Pollutant (CAS Number)	Annual (Carcinogens)	24-Hour (Chronic Toxicants)	1-Hour (Acute Systemic Toxicants)	1-Hour (Acute Irritants)
1,1,1,2-tetrachloro- 2,2-difluoroethane (76-11-9)		52		
1,1,2,2-tetrachloro- 1,2-difluoroethane (76-12-0)		52		
1,1,2,2-tetrachloroethane (79-34-5)	6.3 x 10 ^[-3]			
toluene (108-88-3)		4.7		56
toluene diisocyanate, 2-4 -(584-84-9) and 2-6 - (91-08-7) isomers		0.0002		
trichloroethylene (79-01-06)	5.9 x 10 ^[-2]			
trichlorofluoromethane (75-69-4)			560	
1,1,2-trichloro-,2,2-trifluoroethane(76-13-1)				950
vinyl chloride (75-01-4)	3.8 x 10 ^[-4]			
vinylidene chloride (75-35-4)		0.12		
xylene (1330-20-7)		2.7		65

Appendix 1-17

Toxic Air Pollutant Emission Exemptions

(Source: 15A NCAC 2Q.0702) [Added March 2007]

A permit to emit toxic air pollutants shall not be required under this Section for:

- (1) residential wood stoves, heaters, or fireplaces;
- (2) hot water heaters that are used for domestic purposes only and are not used to heat process water;
- (3) maintenance, structural changes, or repairs that do not change capacity of that process, fuel-burning, refuse-burning, or control equipment, and do not involve any change in quality or nature or increase in quantity of emission of any regulated air pollutant or toxic air pollutant;
- (4) housekeeping activities or building maintenance procedures, including painting buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners, sweeping, use and associated storage of janitorial products, or non-asbestos bearing insulation removal;
- (5) use of office supplies, supplies to maintain copying equipment, or blueprint machines;
- (6) paving parking lots;
- (7) replacement of existing equipment with equipment of the same size, type, and function if the equipment does not result in an increase to the actual or potential emissions of any regulated air pollutant or toxic air pollutant and that does not affect compliance status and, fits the description of the existing equipment in the permit, including the application, such that the replacement equipment can be operated under that permit without any changes to the permit;
- (8) comfort air conditioning or comfort ventilation systems that do not transport, remove, or exhaust regulated air pollutants to the atmosphere;
- (9) equipment used for the preparation of food for direct on-site human consumption;
- (10) non-self-propelled non-road engines, except generators, regulated by rules adopted under Title II of the federal Clean Air Act;
- (11) stacks or vents to prevent escape of sewer gases from domestic waste through plumbing traps;
- (12) use of fire fighting equipment;
- (13) the use for agricultural operations by a farmer of fertilizers, pesticides, or other agricultural chemicals containing one or more of the compounds listed in 15A NCAC 2D .1104 (see Appendix 1-16) if such compounds are applied according to agronomic practices acceptable to the North Carolina Department of Agriculture
- (14) asbestos demolition and renovation projects that comply with 15A NCAC 2D .1110 and that are being done by persons accredited by the Department of Health and Human Services under the Asbestos Hazard Emergency Response Act;
- (15) incinerators used only to dispose of dead animals or poultry as identified in 15A NCAC 2D.1201(c)(4) or incinerators used only to dispose of dead pets as identified in 15A NCAC 2D. 1207(a)(2)(A);
- (16) refrigeration equipment that is consistent with Section 601 through 618 of Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, 40 CFR Part 82, and any other regulations promulgated by EPA under Title VI for stratospheric ozone protection, except those units used as or with air pollution control equipment;
- (17) laboratory activities:
 - (A) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;
 - (B) bench scale experimentation, chemical or physical analyses, training or instruction from nonprofit, non-production educational laboratories;
 - (C) bench scale experimentation, chemical or physical analyses, training or instruction from hospital or health laboratories pursuant to the determination or diagnoses of illnesses; and
 - (D) research and development laboratory activities that are not required to be permitted under Section .0500 of this Subchapter provided the activity produces no commercial product or feedstock material;
- (18) combustion sources as defined in 15 NCAC 2Q .0703 until 18 mo after promulgation of the MACT or GACT standards for combustion sources. (Within 18 mo following promulgation of the MACT or GACT standards for combustion sources, the Commission shall decide whether to keep or remove the

combustion source exemption. If the Commission decides to remove the exemption, it shall initiate rulemaking procedures to remove this exemption.)

- (19) storage tanks used only to store:
 - (A) inorganic liquids with a true vapor pressure less than 1.5 lb per square inch absolute;
 - (B) fuel oils, kerosene, diesel, crude oil, used motor oil, lubricants, cooling oils, natural gas, liquefied petroleum gas, or petroleum products with a true vapor pressure less than 1.5 lb per square inch absolute;
- (20) dispensing equipment used solely to dispense diesel fuel, kerosene, lubricants or cooling oils;
- (21) portable solvent distillation systems that are exempted under 15A NCAC 2Q .0102(b)(1)(I);
- (22) processes:
 - (A) electric motor burn-out ovens with secondary combustion chambers or afterburners;
 - (B) electric motor bake-on ovens;
 - (C) burn-off ovens for paint-line hangers with afterburners;
 - (D) hosiery knitting machines and associated lint screens, hosiery dryers and associated lint screens, and hosiery dyeing processes where bleach or solvent dyes are not used;
 - (E) blade wood planers planing only green wood;
 - (F) saw mills that saw no more than 2,000,000 board ft per yr provided only green wood is sawed;
 - (G) perchloroethylene dry cleaning processes with 12-mo rolling average consumption of:
 - (i) less than 1366 gal of perchloroethylene per yr for facilities with dry-to-dry machines only;
 - (ii) less than 1171 gal of perchloroethylene per yr for facilities with transfer machines only; or
 - (iii) less than 1171 gal of perchloroethylene per yr for facilities with both transfer and dry-to-dry machines;
- (23) wood furniture manufacturing operations as defined in 40 CFR 63.801(a) that comply with the emission limitations and other requirements of 40 CFR Part 63 Subpart JJ, provided that the terms of this exclusion shall not affect the authority of the Director under 15A NCAC 02Q .0712;
- (24) gasoline dispensing facilities or gasoline service station operations that comply with 15A NCAC 2D .0928 and .0932 and that receive gasoline from bulk gasoline plants or bulk gasoline terminals that comply with 15A NCAC 2D .0524, .0925, .0926, .0927, .0932, and .0933 via tank trucks that comply with 15A NCAC 2D .0932;
- (25) the use of ethylene oxide as a sterilant in the production and subsequent storage of medical devices or the packaging and subsequent storage of medical devices for sale if the emissions from all new and existing sources at the facility described in 15A NCAC 2D .0538(d) are controlled at least to the degree described in 15A NCAC 2D .0538(d) and the facility complies with 15A NCAC 2D .0538(e) and (f);
- (26) bulk gasoline plants, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids, that comply with 15A NCAC 2D .0524, .0925, .0926, .0932, and .0933; unless the Director finds that a permit to emit toxic air pollutants is required under this Section for a particular bulk gasoline plant; or
- (27) bulk gasoline terminals, including the storage and handling of fuel oils, kerosenes, and jet fuels but excluding the storage and handling of other organic liquids that comply with 15A NCAC 2D .0524, .0925, .0927, .0932, and .0933 if the bulk gasoline terminal existed before November 1, 1992; unless:
 - (A) the Director finds that a permit to emit toxic air pollutants is required under this Section for a particular bulk gasoline terminal, or
 - (B) the owner or operator of the bulk gasoline terminal meets the requirements of 15A NCAC 2D .0927(i).

Emissions from the activities identified in Subparagraphs (a)(24) through (a)(27) of this Rule shall be included in determining compliance with the toxic air pollutant requirements in this Section and shall be included in the permit if necessary to assure compliance. Emissions from the activities identified in Subparagraphs (a)(1) through (a)(23) of this Rule shall not be included in determining compliance with the toxic air pollutant requirements in this Section.

The addition or modification of an activity identified in Paragraph (a) of this Rule shall not cause the source or facility to be evaluated for emissions of toxic air pollutants.

Because an activity is exempted from being required to have a permit does not mean that the activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

Appendix 1-18

Emission Limits of Particulate Matter from Fuel Burning Indirect Heat Exchangers

(Source: 15A NCAC 2D.0503(c)) [Added March 2008]

Maximum Heat Input (MBtu/h)	Allowable Emission Limit For Particulate Matter (lb/MBtu)
Up to and Including 10	0.60
100	0.33
1000	0.18
10,000 and Greater	0.10

(NOTE: For a heat input between any 2 consecutive heat inputs stated, the allowable emissions of particulate matter is calculated by the equation:

$$E = 1.090 Q^{-0.2594}$$

where:

- E = allowable emission limit for particulate matter in lb/MBtu
- Q = maximum heat input in MBtu/h.)

Appendix 1-19

Emission Limits of Particulate Matter from Wood Burning Indirect Heat Exchangers

(Source: 15A NCAC 2D.0504(c)) [Added March 2008]

Emissions of particulate matter from combustion of wood in indirect heat exchangers

Maximum Heat Input In MBtu/h	Allowable Emission Limit For Particulate Matter In lb/MBtu
Up to and Including 10	0.70
100	0.41
1000	0.25
10,000 and Greater	0.15

(NOTE: For a heat input between any 2 consecutive heat inputs stated in the preceding table, allowable emissions of particulate matter are calculated by the equation:

$$E = 1.1698 (Q^{-0.2230})$$

where:

- E = allowable emission limit for particulate matter in lb/MBtu
- Q = maximum heat input in MBtu/h.)

Appendix 1-20

Maximum Allowable NO_x Emission Rates for Boilers and Indirect Process Heaters

(Source: 15A NCAC 2D.1407 (b)(2) and 2D.1409 (b)) [Added March 2008]

Maximum Allowable NO_x Emission Rates for Boilers and Indirect Process Heaters

Fuel/Boiler Type	Firing Method		
	<u>Tangential</u>	<u>Wall</u>	<u>Stoker or Other</u>
Coal (Wet Bottom)	1.0 lb/MBtu	1.0 lb/MBtu	N/A
Coal (Dry Bottom)	0.45 lb/MBtu	0.50 lb/MBtu	0.40 lb/MBtu
Wood or Refuse	0.20 lb/MBtu	0.30 lb/MBtu	0.20 lb/MBtu
Oil	0.30 lb/MBtu	0.30 lb/MBtu	0.30 lb/MBtu
Gas	0.20 lb/MBtu	0.20 lb/MBtu	0.20 lb/MBtu

Maximum Allowable NO_x Emission Rates for Stationary Internal Combustion Engines

<u>Engine Type</u>	<u>Fuel Type</u>	<u>Limitation</u>
Rich-burn	Gaseous	2.5 g/hp-h
Lean-burn	Gaseous	2.5 g/hp-h
Compression Ignition	Liquid	8.0 g/hp-h

SECTION 2

CULTURAL RESOURCES MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Cultural Resources Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Archaeological Resource* - any material remains of past human life or activities which are at least 50 years old and which are of archaeological interest, including pieces of pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, rock paintings, rock carvings, intaglios, graves, or human skeletal materials. Paleontological specimens are not to be considered archaeological resources unless found in an archaeological context.) (North Carolina General Statutes, Chapter 70, Article 2, Section 70-12 and Article 4, Section 70-48 (NCGS 70-12 and 70-48)) [Revised and Citation Revised March 1998; Revised March 2008].
- *Estuarine Shorelines* - those non-ocean shorelines which are especially vulnerable to erosion, flooding, or other adverse effects of wind and water and are intimately connected to the estuary. This area extends from the mean high water level or normal water level along the estuaries, sounds, bays, and brackish waters as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Environment, Health, and Natural Resources [described in Title 15A, North Carolina Administrative Code, Subchapter 7H, Section .0206(a) (15A NCAC 7H.0206(a))] for a distance of 75 ft landward. For those estuarine shorelines immediately contiguous to waters classified as Outstanding Resource Waters by the Environmental Management Commission, the estuarine shoreline Area of Environmental Concern extends to 575 ft landward from the mean high water level or normal water level, unless the Coastal Resources Commission establishes the boundary at a greater or lesser extent (15A NCAC 7H.0209(b)) [Added March 1998].
- *Fragile Coastal Cultural Resource Areas* - coastal areas generally recognized to be of educational, associative, scientific, aesthetic, or cultural value because of their special importance to our understanding of past human settlement of and interaction with the coastal zone. Their importance serves to distinguish the designated areas as significant among the historic architectural or archaeological remains in the coastal zone, and therein established their value (15A NCAC 7H.0502).
- *Ocean Hazard Areas* - beaches, frontal dunes, inlet lands, and other areas in which geologic, vegetative and soil conditions indicate a substantial possibility of excessive erosion or flood damage (15A NCAC 7H.0301) [Added March 1998].
- *Significant Coastal Archaeological Resources* - coastal areas that contain archaeological remains (objects, features, and/or sites) with more than local significance to history or prehistory. Such areas will be evaluated by the North Carolina Historical Commission in consultation with the Coastal Resources Commission (15A NCAC 7H.0509(a)) [Added March 1998].
- *State-Owned Shipwrecks* - all shipwrecks, vessels, cargoes, tackle, and underwater archaeological artifacts that have remained unclaimed for more than 10 yr and lying on the bottoms of North Carolina navigable waters or ocean waters from within one marine league seaward from the Atlantic seashore extreme low watermark (NCGS 121-22) [Added March 1998].

<p style="text-align: center;">CULTURAL RESOURCES MANAGEMENT GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS</p>						
<p style="text-align: center;">REFER TO CHECKLIST ITEMS:</p>						
<table><tr><td>Missing Checklist Items</td><td>CR.2.1.NC.</td></tr><tr><td>Historic Properties</td><td>CR.5.1.NC. and CR.5.2.NC.</td></tr><tr><td>Archaeological/Indian Sites</td><td>CR.15.1.NC. through CR.15.7.NC.</td></tr></table>	Missing Checklist Items	CR.2.1.NC.	Historic Properties	CR.5.1.NC. and CR.5.2.NC.	Archaeological/Indian Sites	CR.15.1.NC. through CR.15.7.NC.
Missing Checklist Items	CR.2.1.NC.					
Historic Properties	CR.5.1.NC. and CR.5.2.NC.					
Archaeological/Indian Sites	CR.15.1.NC. through CR.15.7.NC.					

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
CR.2. MISSING CHECKLIST ITEMS CR.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>CR.5.</p> <p>HISTORIC PROPERTIES</p> <p>CR.5.1.NC. Proposed development in estuarine shoreline areas must not damage historic architectural resources (15A NCAC 7H.0209 (b) and (e)(7)) [Revised March 1998].</p> <p>CR.5.2.NC. Proposed development in ocean hazard areas must not damage historic architectural resources (15A NCAC 7H.0306 (d)) [Revised March 1998; Revised March 2005].</p>	<p>Verify that development of estuarine shoreline does not cause major or irreversible damage to valuable, documented historic architectural resources.</p> <p>Verify that development in ocean hazard areas does not cause irreversible damage to documented historic architectural resources documented by the Division of Archives and History, the National Historical Registry, the local land-use plan, or other sources.</p>

COMPLIANCE CATEGORY: CULTURAL RESOURCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
CR.15. ARCHAEOLOGICAL/ INDIAN SITES <p>CR.15.1.NC. No person may excavate, remove, damage, or otherwise alter or deface any archaeological resource located on state lands without a permit (NCGS 70-15) [Revised March 1998].</p> <p>CR.15.2.NC. No person may conduct an archaeological excavation on private land registered with the state without a permit (NCGS 70-51) [Revised March 1998].</p> <p>CR.15.3.NC. No person may acquire, display, or retain human skeletal remains from unmarked human burials in North Carolina (NCGS 70-37) [Revised March 1998].</p> <p>CR.15.4.NC. A permit or license is required for the exploration, recovery, or salvage of state-owned abandoned shipwrecks and underwater archaeological artifacts (NCGS 121-25) [Revised March 1998].</p>	<p>Verify that archaeological resource located on state lands are not excavated, removed, damaged, or otherwise altered or defaced without a permit.</p> <p>Verify that archaeological resources excavated or removed from state lands are not sold, purchased, exchanged, transported, received, or offered to be sold, purchased, exchanged, transported, or received without a permit.</p> <p>Verify that archaeological excavation on land listed in the NC Archaeological Record does not occur without a permit.</p> <p>Verify that human skeletal remains removed from unmarked human burials in North Carolina are not acquired, unless permitted as part of a scientific excavation.</p> <p>Verify that human skeletal remains acquired from unmarked burials in North Carolina are not exhibited or sold.</p> <p>Verify that human skeletal remains acquired from unmarked burials in North Carolina are not retained for scientific analysis beyond the period of time provided for such analysis, except under allowed curation.</p> <p>Verify that the exploration, recovery, or salvage of state-owned shipwrecks and underwater archaeological artifacts does not occur without a permit or license.</p>

**COMPLIANCE CATEGORY:
CULTURAL RESOURCES MANAGEMENT
North Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>CR.15.5.NC. Proposed development in estuarine shoreline areas must not damage archaeological resources (15A NCAC 7H.0209 (d)(7)) [Citation Revised March 1998; Citation Revised March 2007].</p>	<p>Verify that development of estuarine shoreline does not cause major or irreversible damage to valuable, documented archaeological resources.</p>
<p>CR.15.6.NC. Proposed development in ocean hazard areas must not damage archaeological resources (15A NCAC 7H.0306 (d)).</p>	<p>Verify that development does not cause major or irreversible damage to valuable archaeological resources documented by the Division of Archives and History, the National Historical Registry, the local land-use plan, or other reliable sources.</p>
<p>CR.15.7.NC. Proposed development in significant coastal archaeological resources areas must meet specific requirements to preserve archaeological findings (15A NCAC 7H.0509 (d) and (e)) [Revised March 1998].</p>	<p>Verify that significant concentrations of archaeological material, preferably reflecting a full range of human behavior, are preserved in-situ for future research by avoidance during planned construction activities.</p> <p>(NOTE: Areas for avoidance are selected by the Commission.)</p> <p>Verify that any activities that would damage or destroy the fragile contents of a designated site's surface or subsurface are not undertaken until an archaeological investigation and a subsequent resource management plan has been implemented.</p> <p>Verify that such investigation and management plans are developed in full consultation with the North Carolina Division of Archives and History.</p> <p>Verify that such archaeological investigations comply with the following criteria:</p> <ul style="list-style-type: none"> - all archaeological work is conducted by an experienced professional archaeologist - initial investigations conducted as part of the permit review process are implemented in three parts: <ul style="list-style-type: none"> - Phase I, a reconnaissance level investigation to determine the nature and extent of archaeological materials over the designated area - Phase II, an intensive level investigation which represents a direct outgrowth of Phase I findings and through systematic data recovery assesses the potential importance of identified concentrations of archaeological materials - Phase III, mitigation of adverse effects to recognized areas of importance; evaluations of research potential are made and prioritized in order of importance, based upon status of previous research in the area and integrity of the remains - an archaeological research design is required for all investigations, subject to approval of the North Carolina Division of Archives and History prior to

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	<p>conducting the work</p> <ul style="list-style-type: none"> - data is collected and recorded accurately and systematically and artifacts are curated according to accepted professional standards at an approved repository. <p>(NOTE: The Coastal Resources Commission has designated Bermuda Island to be a significant coastal archaeological resource area of environmental concern. Bermuda Island is a former barrier island located within Stump Sound in southwestern Onslow County. The island is 1.2 mi long and 0.1 to 0.25 mi wide.)</p>

SECTION 3

HAZARDOUS MATERIALS MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Hazardous Materials Management and is intended to supplement the U.S. TEAM Guide. North Carolina, however, has no specific requirements regarding the management of hazardous materials. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

See WA.5.9.NC. for requirements covering the discharge of a hazardous substance to the groundwaters of the State, or in proximity thereto.

HAZARDOUS MATERIALS MANAGEMENT GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS	
REFER TO CHECKLIST ITEMS:	
Missing Checklist Items	HM.2.1.NC.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
HM.2. MISSING CHECKLIST ITEMS HM.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

SECTION 4

HAZARDOUS WASTE MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Hazardous Waste Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

See WA.5.9.NC. for requirements covering the discharge of a hazardous waste to the groundwaters of the State, or in proximity thereto.

Regulations Incorporated by Reference

In applying the Federal requirements incorporated by reference, the following substitutions or exceptions apply (15A NCAC 13A.0101 (a)):

1. Department of Environment, Health, and Natural Resources is substituted for U.S. Environmental Protection Agency (USEPA) except in 40 CFR 262.51 through 262.54, 262.56, 262.57 where references to the USEPA remain without substitution.
2. Secretary of the Department of Environment, Health, and Natural Resources is substituted for Administrator, Regional Administrator, and Director except for 40 CFR 262.55 through 262.57, 264.12(a), 268.5, 268.6, 268.42(b) and 268.44 where the references to the Administrator, Regional Administrator, and Director remain without substitution.

The following regulations have been incorporated by reference, including subsequent amendments and editions: (Revised March 2010).

According to 15A NCAC 13A.0101, General:

40 CFR 260.1 through 260.3 (Subpart A), General

40 CFR 260.11, References

According to 15A NCAC 13A.0102, Definitions:

40 CFR 260.10 (Subpart B), Definitions, is incorporated by reference, including subsequent amendments and editions except that the Definitions for "Disposal", "Landfill", "Management or hazardous waste management", "Person", "Sludge", "Storage", and "Treatment" are defined by G.S. 130A-290 and are not incorporated by reference and amendments and editions promulgated after October 15, 2008 are not incorporated by reference. (see Definitions below)

According to 15A NCAC 13A.0103, Petitions:

In applying the federal requirements incorporated by reference in this Rule, "15A NCAC 24B .0101" shall be substituted for references to 40 CFR 260.20.

40 CFR 260.21 through 260.41 (Subpart C), "Rulemaking Petitions," are incorporated by reference including subsequent amendments and editions. except that amendments and editions promulgated after October 15, 2008 are not incorporated by reference.

According to 15A NCAC 13A.0104, Public Information – Part 2:

40 CFR 2.100 to 2.120 (Subpart A), provisions concerning requests for information, except for 40 CFR 2.100(a)

According to 15A NCAC 13A.0105, General Program Requirements – Part 124:

40 CFR 124.1 through 124.21 (Subpart A), General Program Requirements, except for 40 CFR 124.2(c)

According to 15A NCAC 13A.0106, Identification and Listing of HW [Revised March 2010]:

40 CFR 261.1 through 261.9 (Subpart A), "General", are incorporated by reference including subsequent amendments and editions, except that 40 CFR 261.2(a)(2)(ii) and 40 CFR 261.4(a)(23), 261.4(a)(24), and 261.4(a)(25) are not incorporated by reference.

40 CFR 261.10 through 261.11 (Subpart B), "Criteria for Identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste", are incorporated by reference including subsequent amendments and editions.

40 CFR 261.20 through 261.24 (Subpart C), "Characteristics of Hazardous Waste" are incorporated by reference including subsequent amendments and editions.

40 CFR 261.30 through 261.37 (Subpart D), "Lists of Hazardous Wastes " are incorporated by reference including subsequent amendments and editions.

40 CFR 261.38 through 261.41 (Subpart E), "Exclusions/Exemptions" are incorporated by reference including subsequent amendments and editions.

The Appendices to 40 CFR Part 261 are incorporated by reference including subsequent amendments and editions.

According to 15A NCAC 13A.0107, Standards Applicable to Generators of Hazardous Waste – Part 262 [Revised March 2008]:

40 CFR 262.10 through 262.12 (Subpart A), General

40 CFR 262.20 through 262.27 (Subpart B), "The Manifest," are incorporated by reference including subsequent amendments and editions, except that 262.24, 262.25, and 262.26 are not incorporated by reference.

40 CFR 262.30 through 262.34 (Subpart C), Pre-Transport Requirements

40 CFR 262.40 through 262.44 (Subpart D), Recordkeeping and Reporting

40 CFR 262.50 through 262.58 (Subpart E), Exports of Hazardous Waste

40 CFR 262.60 (Subpart F), Imports of Hazardous Waste

40 CFR 262.70 (Subpart G), Farmers

Appendix to 40 CFR Part 262;

According to 15A NCAC 13A.0108, Standards Applicable to Transporters of Hazardous Waste- Part 263:

40 CFR 263.10 through 263.12 (Subpart A), General

40 CFR 263.20 through 263.22 (Subpart B), Compliance With the Manifest System and Recordkeeping

40 CFR 263.30 through 263.31 (Subpart C), Hazardous Waste Discharges

According to 15A NCAC 13A.0109, Standards for Owners/Operators of HWTSD Facilities – Part 264:

40 CFR 264.1 through 264.4 (Subpart A), General

40 CFR 264.10 through 264.19 (Subpart B), General Facility Standards

40 CFR 264.30 through 264.37 (Subpart C), Preparedness and Prevention

40 CFR 264.50 through 264.56 (Subpart D), Contingency Plan and Emergency Procedures

40 CFR 264.70 through 264.77 (Subpart E), Manifest System, Recordkeeping, and Reporting

40 CFR 264.90 through 264.101 (Subpart F), Releases From Solid Waste Management Units, however "January 26, 1983" is substituted for "July 26, 1982" contained in 40 CFR 264.90(a)(2).

40 CFR 264.110 through 264.120 (Subpart G), Closure and Post-Closure

40 CFR 264.170 through 264.179 (Subpart I), Use and Management of Containers

40 CFR 264.190 through 264.200 (Subpart J), Tank Systems

40 CFR 264.220 through 264.232 (Subpart K), Surface Impoundments

40 CFR 264.250 through 264.259 (Subpart L), Waste Piles

40 CFR 264.270 through 264.283 (Subpart M), Land Treatment

40 CFR 264.300 through 264.317 (Subpart N), Landfills

40 CFR 264.340 through 264.351 (Subpart O), Incinerators

40 CFR 264.550 through 264.555 (Subpart S), Special Provisions for Cleanup

40 CFR 264.570 through 264.575 (Subpart W), Drip Pads

40 CFR 264.600 through 264.603 (Subpart X), Miscellaneous Units

40 CFR 264.1030 through 264.1049 (Subpart AA), Air Emission Standards for Process Vents

40 CFR 264.1050 through 264.1079 (Subpart BB), Air Emission Standards for Equipment Leaks

40 CFR 264.1080 through 264.1091 (Subpart CC), Air Emission Standards for Tanks, Surface Impoundments, and Containers

40 CFR 264.1100 through 264.1102 (Subpart DD), Containment Buildings

Appendices to 40 CFR Part 264

According to 15A NCAC 13A.0110, Interim status STDs for owners-op of HWSTD facilities- part 265:

40 CFR 265.1 through 265.4 (Subpart A), General

40 CFR 265.10 through 265.19 (Subpart B), General Facility Standards

40 CFR 265.30 through 265.37 (Subpart C), Preparedness and Prevention except that 265.35, Required aisle space is not incorporated (see HW.220.1.NC.)

40 CFR 265.50 through 265.56 (Subpart D), Contingency Plan and Emergency Procedures
 40 CFR 265.70 through 265.77 (Subpart E), Manifest System, Recordkeeping, and Reporting
 40 CFR 265.90 through 265.94 (Subpart F), Groundwater Monitoring
 CFR 265.110 through 265.121 (Subpart G), Closure and Post-Closure
 40 CFR 265.170 through 265.178 (Subpart I), Use and Management of Containers; additionally, the owner or operator keeps records and results of required inspections for at least 3 yr from the date of the inspection
 40 CFR 265.190 through 265.202 (Subpart J), Tank Systems
 40 CFR 265.220 through 265.231 (Subpart K), Surface Impoundments
 40 CFR 265.250 through 265.260 (Subpart L), Waste Piles
 40 CFR 265.270 through 265.282 (Subpart M), Land Treatment
 40 CFR 265.300 through 265.316 (Subpart N), Landfills
 40 CFR 265.340 through 265.352 (Subpart O), Incinerators
 40 CFR 265.370 through 265.383 (Subpart P), Thermal Treatment
 40 CFR 265.400 through 265.406 (Subpart Q), Chemical, Physical, and Biological Treatment
 40 CFR 265.440 through 265.445 (Subpart W), Drip Pads
 40 CFR 265.1030 through 265.1049 (Subpart AA), Air Emission Standards for Process Vents
 CFR 265.1050 through 265.1079 (Subpart BB), Air Emission Standards for Equipment Leaks
 40 CFR 265.1080 through 265.1091 (Subpart CC), Air Emission Standards for Tanks, Surface Impoundments, and Containers
 40 CFR 265.1100 through 265.1102 (Subpart DD), Containment Buildings
 Appendices to 40 CFR Part 265
 According to 15A NCAC 13A.0111, STDs for the MGMT of Specific HW/Types HWM Facilities- Part 266:
 40 CFR 266.20 through 266.23 (Subpart C), Recyclable Materials Used in a Manner Constituting Disposal
 40 CFR 266.70 (Subpart F), Recyclable Materials Utilized for Precious Metal Recovery
 40 CFR 266.80 (Subpart G), Spent Lead-Acid Batteries Being Reclaimed
 40 CFR 266.100 through 266.122 (Subpart H), Hazardous Waste Burned in Boilers and Industrial Furnaces
 40 CFR 266.200 through 266.206 (Subpart M), "Military Munitions", are incorporated by reference including subsequent amendments and editions
 40 CFR 266.210 through 266.360 (Subpart N), "Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation and Disposal", are incorporated by reference including subsequent amendments and editions
 Appendices to 40 CFR Part 266
 According to 15A NCAC 13A.0112, Land Disposal Restrictions – Part 268:
 40 CFR 268.1 through 268.14 (Subpart A), General
 40 CFR 268.20 through 268.39 (Subpart C), Prohibitions on Land Disposal, except that 40 CFR 268.21 through 268.29 are not incorporated by reference
 40 CFR 268.40 through 268.49 (Subpart D), Treatment Standards
 40 CFR 268.50 (Subpart E), Prohibitions on Storage
 Appendices to 40 CFR Part 268
 According to 15A NCAC 13A.0113, Hazardous Waste Permit Program – 270:
 40 CFR 270.1 through 270.6 (Subpart A), General Information, however, January 26, 1983 is substituted for July 26, 1982 contained in 40 CFR 270.1(c)
 40 CFR 270.10 through 270.29 (Subpart B), Permit Application
 40 CFR 270.30 through 270.33 (Subpart C), Permit Conditions
 40 CFR 270.40 through 270.43 (Subpart D), Changes to Permit
 40 CFR 270.50 through 270.51 (Subpart E), Expiration and Continuation of Permits
 40 CFR 270.60 through 270.66 (Subpart F), Special Forms of Permits
 40 CFR 270.70 through 270.73 (Subpart G), Interim Status, however, January 1, 1986 is substituted for November 8, 1985 contained in 40 CFR 270.73(c)
 According to 15A NCAC 13A.0114, Requirement/Authorization of State Hazardous Waste Program – part 271:
 40 CFR 271.17, Sharing of information
 According to 15A NCAC 13A.0119, Standards for Universal Waste Management – Part 273:
 40 CFR 273.1 through 273.5 (Subpart A), General
 40 CFR 273.10 through 273.20 (Subpart B), Standards for Small Quantity Handlers of Universal Waste
 40 CFR 273.30 through 273.40 (Subpart C), Standards for Large Quantity Handlers of Universal Waste
 40 CFR 273.50 through 273.56 (Subpart D), Standards for Universal Waste Transporters

40 CFR 273.60 through 273.62 (Subpart E), Standards for Destination Facilities
40 CFR 273.70 (Subpart F), Import Requirements

Definitions

- 40 CFR 260.10 (Subpart B), Definitions, is incorporated by reference, including subsequent amendments and editions except that the Definitions for "Disposal", "Landfill", "Management or hazardous waste management", "Person ", "Sludge", "Storage", and "Treatment" are defined by G.S. 130A-290 and are not incorporated by reference and amendments and editions promulgated after October 15, 2008 are not incorporated by reference. (15A NCAC 13A.0102) [Added March 2009].
- *Department* - the NC Department of Environment, Health, and Natural Resources (DEHNR) (15A NCAC 13A.0102) [Citation Revised March 1998].
- *Division* - the Solid Waste Management Division (SWMD) (15A NCAC 13A.0102) [Citation Revised March 1998].
- *Long-Term Storage* - the containment of hazardous waste for an indefinite period of time in a facility designed to be closed with the hazardous waste in place (15A NCAC 13A.0102) [Citation Revised March 1998].
- *Off-site Recycling Facility* - any facility that receives shipments of hazardous waste from off-site to be recycled or processed for recycling through any process conducted at the facility, but does not include any facility owned or operated by a generator of hazardous waste solely to recycle their own waste (15A NCAC 13A.0102) [Citation Revised March 1998].

**HAZARDOUS WASTE MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	HW.2.1.NC.
Generators	HW.55.1.NC. and HW.55.2.NC.
Transportation	HW.100.1.NC
All TSDFs	
General	HW.105.1.NC. through HW.105.3.NC.
Documentation	[Deleted]
Surface Impoundments	HW.150.1.NC. and HW.150.2.NC.
Hazardous Waste Landfills	HW.165.1.NC.
Additional Requirements for Permitted TSDFs	
General	HW.180.1.NC.
Incinerators	HW.205.1.NC. through HW.205.5.NC.
Additional Requirements for Interim Status TSDFs	HW.220.1.NC.

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<p>HW.2.</p> <p>MISSING CHECKLIST ITEMS</p> <p>HW.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

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GENERATORS HW.55. General HW.55.1.NC. Generators must meet specific recordkeeping requirements (15A NCAC 13A.0107(d)) [Citation Revised March 1998]. HW.55.2.NC. [Deleted March 2001].	<p>Verify that generators keep records of inspections and the results of inspections required by 40 CFR 262.34 for at least 3 yr from the date of the inspection.</p> <p>[Addition to Federal requirements repealed.]</p>

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>HW.100.</p> <p>TRANSPORTATION</p> <p>HW.100.1.NC. Transporters of hazardous waste must meet specific requirements when manifest discrepancies occur (15A NCAC 13A.0108) [Added March 2001].</p>	<p>Verify that, upon discovering a significant manifest discrepancy, the transporter attempts to reconcile the discrepancy with the waste generator (e.g. with telephone conversations).</p> <p>Verify that, if the discrepancy is not resolved within 15 days after receiving the waste, the transporter immediately submit to the Department a letter describing the discrepancy and attempts to reconcile it with a copy of the manifest or shipping paper at issue.</p> <p>(NOTE: Manifest discrepancies are differences between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity or type of hazardous waste a transporter actually transports. Significant discrepancies in quantity are: for bulk waste, variations greater than 10 percent in weight; and, for batch waste, any variation in piece count (e.g. a discrepancy of one drum in a truckload). Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis (e.g. waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper).)</p>

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<p>ALL TSDFS</p> <p>HW.105. General</p> <p>HW.105.1.NC. All hazardous waste management facilities must meet specific separation distance requirements (15A NCAC 13A.0109(r)(2)) [Revised March 1998].</p>	<p>Verify that the hazardous waste management facility meets the following minimum separation distances to the maximum extent feasible:</p> <ul style="list-style-type: none"> - the hazardous waste management facilities are located at least 0.25 mi from institutions including, but not limited to, schools, health care facilities, and prisons, unless the facility can demonstrate that no unreasonable risks is posed by the proximity of the facility - all hazardous waste is treated and stored a minimum of 50 ft from the property line, except all hazardous waste with ignitable, incompatible, or reactive characteristics is to be treated and stored a minimum of 200 ft from the property line if the adjacent area is zoned for any use other than industrial or is not zoned. <p>Verify that all hazardous waste landfills, long-term storage facilities, land treatment facilities, and surface impoundments meet the following separation distances:</p> <ul style="list-style-type: none"> - all hazardous waste is located a minimum of 200 ft from the property line - each hazardous waste landfill and long-term storage or surface impoundment facility is constructed so that the bottom of the facility is 10 ft or more above the historical high groundwater level - all hazardous waste is located a minimum of 1000 ft from the zone of influence of any existing off-site groundwater well used for drinking water, and outside the zone of influence of any existing or planned onsite drinking water well. <p>Verify that hazardous waste storage and treatment facilities for liquid waste classified as TC toxic, toxic, or acutely toxic and stored or treated in tanks or containers are not located:</p> <ul style="list-style-type: none"> - in the recharge area of an aquifer designated as an existing sole drinking water source unless an adequate secondary containment system is constructed and the facility can demonstrate no unreasonable risk to public health - within 200 ft of surface water impoundments or surface water streams with continuous flow as defined by the United States Geological Survey - in an area that will allow direct surface or subsurface discharge to WS-I, WS-II, or SA waters or a Class III Reservoir - in an area that will allow direct surface or subsurface discharge to the watershed for a Class I or II Reservoir - within 200 ft horizontally of a 100-yr floodplain elevation - within 200 ft of a seismically active area

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<p>HW.105.2.NC. All TSDFs operating a long-term storage facility must meet specific location requirements (15A NCAC 13A.0109(r)(4)) [Citation Revised March 1998].</p>	<ul style="list-style-type: none"> - within 200 ft of a mine, cave, or cavernous bedrock. <p>Verify that the long-term storage facility is not located in any of the following areas:</p> <ul style="list-style-type: none"> - in the recharge area of an aquifer which is an existing sole drinking water source - within 200 ft of a surface water stream with continuous flow as defined by the United States Geological Survey - in an area that will allow direct surface or subsurface discharge to WS-I, WS-II, or SA waters or a Class III Reservoir - in an area that will allow direct surface or subsurface discharge to a watershed for a Class I or II Reservoir - within 200 ft horizontally of a 100-yr flood hazard elevation - within 200 ft of a seismically active area - within 200 ft of a mine, cave, or cavernous bedrock. <p>Verify that a long-term storage facility is located in highly weathered, relatively impermeable clayey formations with the following soil characteristics:</p> <ul style="list-style-type: none"> - the depth of the unconsolidated soil materials is equal to or greater than 20 ft - the percentage of fine-grained soil material is equal to or greater than 30 percent passing through a number 200 sieve - soil liquid limit is equal to or greater than 30 - soil plasticity index is equal to or greater than 15 - soil compacted hydraulic conductivity is a maximum of 1.0×10^{-7} cm/s - soil cation exchange capacity is equal to or greater than 5 milliequivalents/100 g - soil potential volume change index is equal to or less than 4 - soils are underlain by a competent geologic formation with a rock quality designation equal to or greater than 75 percent, unless other geological conditions afford adequate protection of public health and the environment. <p>Verify that the long-term storage facility is located in areas of low to moderate, relief to the extent necessary to prevent landsliding or slippage and slumping.</p> <p>(NOTE: The site may be graded to comply with this standard.)</p>
<p>HW.105.3.NC. Facilities considering establishing a new hazardous waste management facility must meet specific site monitoring and location requirements (15A NCAC 13A.0109(r)(6) and (7)) [Citation Revised</p>	<p>Verify that the facility constructs and maintains a minimum of 2 observation wells, one upgradient and one downgradient of the proposed facility; establishes background groundwater concentrations, and monitors annually for all hazardous wastes that will be stored, treated, or disposed at the facility.</p> <p>Verify that the facility holds at least one public meeting in the county in which the facility is to be located to inform the community of all hazardous waste management activities and to allow the community to identify specific health,</p>

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<p>March 1998].</p>	<p>safety, and environmental concerns or problems.</p> <p>Verify that a public notice of this meeting is provided at least 30 days prior to the meeting.</p> <p>Verify that the public notice encompasses and includes the following:</p> <ul style="list-style-type: none"> - notification of the boards of county commissioners of the county where the proposed site is to be located and all contiguous counties in North Carolina - a legal advertisement in a newspaper or newspapers serving those counties - provision of a news release to at least one newspaper, one radio station, and one TV station serving these counties - includes the time, place, and purpose of the meetings. <p>Verify that a written transcript and other written material submitted or used at the meeting are submitted to the local public library closest to and in the county of the proposed site with a request that the information be made available to the public.</p> <p>Verify that no less than 30 days after the first public meeting transcript is available at the local public library, the facility holds at least one additional public meeting in order to attempt to resolve community concerns.</p> <p>Verify that the facility provides public notice of this meeting at least 30 days prior to the meeting.</p> <p>Verify that the permit application, written transcripts of all public meetings and any additional material submitted or used at the meetings, and any additions or corrections to the application, including any responses to notices of deficiencies are submitted to the local library closest to and in the county of the proposed site with a request that it be made available to the public until the permit decision is made.</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
ALL TSDFs HW.145. Documentation Requirements HW.145.1.NC. [Deleted March 2001].	 [Addition to federal requirements repealed.]

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>ALL TSDFS</p> <p>HW.150. Surface Impoundments</p> <p>HW.150.1.NC. All TSDFs maintaining a surface impoundment must meet the following additional design requirements (15A NCAC 13A.0109(l)(2)) [Citation Revised March 1998].</p> <p>HW.150.2.NC. All TSDFs maintaining a surface impoundment must meet the following additional location requirements (15A NCAC 13A.0109(r)(4) and (5)) [Citation Revised March 1998].</p>	<p>Verify that the liner system consists of at least 2 liners.</p> <p>Verify that artificial liners are equal to or greater than 30 mils in thickness.</p> <p>Verify that clayey liners are equal to or greater than 5 ft in thickness and have a maximum permeability of 1.0×10^{-7} cm/s.</p> <p>Verify that clayey liner soils meet all of the following criteria:</p> <ul style="list-style-type: none"> - the percentage of fine-grained soil material is equal to or greater than 30 percent passing through a number 200 sieve - soil liquid limit is equal to or greater than 30 - soil plasticity index is equal to or greater than 15 - soil compacted hydraulic conductivity is a maximum of 1.0×10^{-7} cm/s - soil cation exchange capacity is equal to or greater than 5 milliequivalents/100 g - soil potential volume change index is equal to or less than 4. <p>Verify that a leachate collection system is constructed between the upper liner and the bottom liner.</p> <p>Verify that a leachate detection system is constructed below the bottom liner.</p> <p>Verify that surface impoundments are constructed in such a manner as to prevent landsliding, slippage, or slumping.</p> <p>Verify that a surface impoundment facility is not located in the following areas:</p> <ul style="list-style-type: none"> - recharge area of an aquifer which is an existing sole drinking water source - within 200 ft of a surface water stream with continuous flow as defined by the United States Geological Survey - an area that will allow direct surface or subsurface discharge to WS-I, WS-II, or SA waters or a Class III Reservoir - an area that will allow direct surface or subsurface discharge to a watershed for a Class I or II Reservoir - within 200 ft horizontally of a 100-yr flood hazard elevation - within 200 ft of a seismically active area - within 200 ft of a mine, cave, or cavernous bedrock. <p>Verify that all new hazardous waste impoundments that close with hazardous waste residues left in place comply with location standards for hazardous waste</p>

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	landfills, unless the TSDF can demonstrate that equivalent protection of public health and environment is afforded by another standard.

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>ALL TSDFS</p> <p>HW.165. Hazardous Waste Landfills</p> <p>HW.165.1.NC. All TSDFs operating a hazardous waste landfill must meet specific additional location standards (15A NCAC 13A.0109(r)(4)) [Citation Revised March 1998].</p>	<p>Verify that a hazardous waste landfill is not located in any of the following areas:</p> <ul style="list-style-type: none"> - the recharge area of an aquifer which is an existing sole drinking water source - within 200 ft of a surface water stream with continuous flow as defined by the United States Geological Survey - an area that allows direct surface or subsurface discharge to WS-I, WS-II, or SA waters or a Class III Reservoir - an area that allows direct surface or subsurface discharge to a watershed for a Class I or II Reservoir - within 200 ft horizontally of a 100-yr flood hazard elevation - within 200 ft of a seismically active area - within 200 ft of a mine, cave, or cavernous bedrock. <p>Verify that the landfill is located in highly weathered, relatively impermeable clayey formations with the following soil characteristics:</p> <ul style="list-style-type: none"> - the depth of the unconsolidated soil materials is equal to or greater than 20 ft - the percentage of fine-grained soil material is equal to or greater than 30 percent passing through a number 200 sieve - soil liquid limit is equal to or greater than 30 - soil plasticity index is equal to or greater than 15 - soil compacted hydraulic conductivity is a maximum of 1.0×10^{-7} cm/s - soil cation exchange capacity is equal to or greater than 5 meqs/100 g - soil potential volume change index is equal to or less than 4 - soils are underlain by a competent geologic formation with a rock quality designation equal to or greater than 75 percent, unless other geological conditions afford adequate protection of public health and the environment. <p>Verify that the landfill is located in areas of low to moderate relief to the extent necessary to prevent landsliding or slippage and slumping.</p> <p>(NOTE: The site may be graded to comply with this standard.)</p>

<p align="center">COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT North Carolina Supplement</p>	
<p align="center">REGULATORY REQUIREMENTS:</p>	<p align="center">REVIEWER CHECKS: March 2010</p>
<p>ADDITIONAL REQUIREMENTS FOR PERMITTED TSDFS</p> <p>HW.180. General</p> <p>HW.180.1.NC. Permitted TSDFS must file the permit in the register of deeds' office (15A NCAC 13B.0204(b)).</p>	<p>Verify that a TSDF granted a permit for disposal of hazardous waste on land files the certified copy of the permit in the register of deeds' office in the county or counties in which the land is located.</p>

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>ADDITIONAL REQUIREMENTS FOR PERMITTED TSDFS</p> <p>HW.205. Incinerators</p> <p>HW.205.1.NC. A hazardous waste incinerator must meet specific emissions requirements (15A NCAC 2D.1203(c) [Added March 1998; Revised March 2001].</p>	<p>(NOTE: These emission standards apply to all incinerators except where Rule .0524 (New Source Performance Standards), .1110 (National Emission Standards for Hazardous Air Pollutants), or .1111 (Maximum Achievable Control Technology) applies.)</p> <p>Verify that hazardous waste incinerators meet particulate matter requirements of 40 CFR 264.343(c).</p> <p>Verify that the visible emissions are controlled (see AE.9.2.NC.).</p> <p>Verify that sulfur dioxide emissions are controlled (see AE.15.3.NC.).</p> <p>Verify that odorous emissions are controlled (see AE.5.1.NC.).</p> <p>Verify that emissions of hydrogen chloride meet the requirements of 40 CFR 264.343(b).</p> <p>(NOTE: Compliance with hydrogen chloride and mercury emissions are determined by averaging emissions over a one-hour period.)</p> <p>Verify that emissions of mercury and mercury compounds from the stack or chimney does not exceed 0.032 pounds per hour.</p> <p>Verify that control of toxic air pollutants can be demonstrated (2Q.0700).</p> <p>Verify that, in addition to the ambient air quality standards in Section .0400 (see Appendix 1-13, the following ambient air quality standards, which are an annual average, in milligrams per cubic meter at 77°F (25°C) and 29.92 inches (760 mm) of mercury pressure and which are increments above background concentrations, are applied aggregately to all incinerators:</p> <ul style="list-style-type: none"> - arsenic and its compounds 2.3×10^{-7} - beryllium and its compounds 4.1×10^{-6} - cadmium and its compounds 5.5×10^{-6} - chromium (VI) and its compounds 8.3×10^{-8}. <p>(NOTE: The owner or operator of a facility with incinerators must demonstrate compliance with the ambient standards by following the procedures set out in Rule .1106 of this Subchapter. Modeling demonstrations must comply with the requirements of Rule .0533 of this Subchapter.)</p>

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>HW.205.2.NC. A hazardous waste incinerator must meet operational requirements (15A NCAC 2D.1203(d)) [Added March 2001].</p>	<p>(NOTE: These operational standards do not apply to any incinerators when applicable operational Rule .0524 (New Source Performance Standards), .1110 (National Emission Standards for Hazardous Air Pollutants), or .1111 (Maximum Achievable Control Technology) apply.)</p> <p>Verify that the hazardous waste incinerators comply with 15A NCAC 13A.0101 through .0119 (hazardous waste requirements.)</p>
<p>HW.205.3.NC. A hazardous waste incinerator must meet test methods and procedures standards (15A NCAC 2D.1203(e)) [Added March 2001].</p>	<p>Verify that required test methods and procedures are used.</p> <p>(NOTE: The test methods and procedures described in Rule .0501 of this Subchapter and in 40 CFR Part 60 Appendix A and 40 CFR Part 61 Appendix B shall be used to determine compliance with emission rates. Method 29 of 40 CFR Part 60 shall be used to determine emission rates for metals. However, Method 29 shall be used to sample for chromium (VI), and SW 846 Method 0060 shall be used for the analysis.)</p> <p>(NOTE: The Director may require the owner or operator to test his incinerator to demonstrate compliance with the listed emission standards.)</p>
<p>HW.205.4.NC. A hazardous waste incinerator must meet excess emissions and start-up and shut-down standards (15A NCAC 2D.1203(g)) [Added March 2001].</p>	<p>Verify that all incinerators comply with Rule .0535, Excess Emissions Reporting and Malfunctions (see AE.7.2.NC.).</p>
<p>HW.205.5.NC. A hazardous waste incinerator must meet excess emissions and start-up and shut-down standards (15A NCAC 2D.1203(f)) [Added March 2001].</p>	<p>Verify that the owner or operator of an incinerator complies with the monitoring, recordkeeping, and reporting requirements in Section .0600 of this Subchapter, 40 CFR 270.31, and 40 CFR 264.347.</p> <p>Verify that the owner or operator maintains and operates a continuous temperature monitoring and recording device for the primary chamber and, where there is a secondary chamber, for the secondary chamber.</p> <p>Verify that the owner or operator of an incinerator that has installed air pollution abatement equipment to reduce emissions of hydrogen chloride installs, operates, and maintains continuous monitoring equipment to measure pH for wet scrubber systems and rate of alkaline injection for dry scrubber systems.</p> <p>(NOTE: The Director will require the owner or operator of an incinerator with a permitted charge rate of 750 pounds per hour or more to install, operate, and</p>

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
	<p>maintain continuous monitors for oxygen or for carbon monoxide or both as necessary to determine proper operation of the incinerator. The Director may require the owner operator of an incinerator with a permitted charge rate, of less than 750 pounds per hour to install, operate, and maintain monitors for oxygen or for carbon monoxide or both as necessary to determine operation of the incinerator.)</p>

COMPLIANCE CATEGORY: HAZARDOUS WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
ADDITIONAL REQUIREMENTS FOR INTERIM STATUS TSDFs HW.220. General HW.220.1.NC. Interim status TSDFs must maintain at least 2 feet of aisle space (15A NCAC 13A.0110(c)) [Added March 2007].	<p>Verify that an aisle space of at least 2 feet is maintained to allow the unobstructed movement of personnel, fire prevention equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency.</p>

SECTION 5

NATURAL RESOURCES MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Natural Resources Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Coastal Reserve* - those coastal land and water areas set aside to be maintained in their natural state for research, education and compatible recreation and enjoyment of natural and scenic beauty (15A NCAC 7O.0102).
- *Coastal Wetlands* - any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides. Coastal wetlands contain some, but not necessarily all, of the following marsh plant species:
 1. Cord Grass (*Spartina alterniflora*)
 2. Black Needlerush (*Juncus roemerianus*)
 3. Glasswort (*Salicornia* spp.)
 4. Salt Grass (*Distichlis spicata*)
 5. Sea Lavender (*Limonium* spp.)
 6. Bulrush (*Scirpus* spp.)
 7. Saw Grass (*Cladium jamaicense*)
 8. Cat-tail (*Typha* spp.)
 9. Salt Meadow Grass (*Spartina patens*)
 10. Salt Reed Grass (*Spartina cynosuroides*).Included in this definition of coastal wetlands is "such contiguous land as the Secretary of the Department of Environment, Health, and Natural Resources (DEHNR) reasonably deems necessary to affect by any such order in carrying out the purposes of [North Carolina General Statutes (NCGS) section 113]" (15A NCAC 7H.0205 (quoting NCGS 113-230(a)) [Revised March 1998]).
- *Conserve and Conservation* - the use and application of all methods, procedures, and biological information for the purpose of bringing populations of native and once-native species of wildlife in balance with the optimum carrying capacity of their habitat, and maintaining such balance. These methods and procedures include all activities associated with scientific resource management such as research; census; law enforcement; habitat protection, acquisition, and enhancement; and restoration of species to unoccupied parts of historic range. With respect to endangered and threatened species, the terms means the use of methods and procedures to bring the species to the point at which the measures provided are no longer necessary (NCGS 113-331).
- *Endangered Species* - any native or once-native species of wild animal whose continued existence as a viable component of the state's fauna is determined by the Wildlife Resources Commission to be in jeopardy or any species of wild animal determined to be an endangered species pursuant to the *Endangered Species Act* (NCGS 113-331).
- *Erosion Escarpment* - normal vertical drop in the beach profile caused from high tide or storm tide erosion (15A NCAC 7H.0305).
- *Estuarine Shorelines* - those nonocean shorelines that are especially vulnerable to erosion, flooding, or other adverse effects of wind and water and are intimately connected to the estuary. This area extends from the mean high water level or normal water level along the estuaries, sounds, bays, and brackish waters as set forth in an agreement adopted by the Wildlife Resources Commission and the DEHNR [described in 15A NCAC

7H.0206(a)] for a distance of 75 ft landward. For those estuarine shorelines immediately contiguous to waters classified as Outstanding Resource Waters by the Environmental Management Commission, the estuarine shoreline area of environmental concern (AEC) extends to 575 ft landward from the mean high water level or normal water level, unless the Coastal Resources Commission establishes the boundary at a greater or lesser extent following required public hearing(s) within the affected county or counties (15A NCAC 7H.0209).

- *Estuarine Waters* - as defined in GS 113A-113(b)(2), the boundaries between inland and coastal fishing waters are set forth in an agreement adopted by the Wildlife Resources Commission and DEHNR and in the most current revision of the North Carolina Marine Fisheries Regulations for Coastal Waters, codified at 15A NCAC 3Q.0200 (15A NCAC 7H.0206).
- *Estuary* - that part of a river or stream or body of water having unimpaired connection with the open sea, where sea water is measurably diluted with fresh water derived from land drainage (15A NCAC 7O.0102).
- *Fragile Coastal Natural Resource Areas* - generally recognized to be of educational, scientific, or cultural value because of the natural features of the particular site. These features in the coastal area serve to distinguish the area designated from the vast majority of coastal landscape and therein establish its value. Such areas may be key components of systems unique to the coast which act to maintain the integrity of that system (15A NCAC 7H.0502).
- *Frontal Dunes* - deemed to be the first mound of sand located landward of the ocean beach having sufficient vegetation, height, continuity, and configuration to offer protective value (15A NCAC 7H.0305).
- *High Hazard Flood Area* - the area subject to high velocity waters (including hurricane wave wash) in a storm having a 1 percent chance of being equaled or exceeded in any given year, as identified as zone V1-30 on the flood insurance rate maps of the Federal Insurance Administration, U.S. Department of Housing and Urban Development (15A NCAC 7H.0304) [Revised March 1998].
- *Inlet Hazard Area* - natural-hazard areas that are especially vulnerable to erosion, flooding and other adverse effects of sand, wind, and water because of their proximity to dynamic ocean inlets. This area shall extend landward from the normal low water line a distance sufficient to encompass that area within which the inlet shall, based on statistical analysis, migrate, and shall consider such factors as previous inlet territory, structurally weak areas near the inlet and external influences such as jetties and channelization. The areas identified as suggested Inlet Hazard Areas included in the report entitled INLET HAZARD AREAS, The Final Report and Recommendations to the Coastal Resources Commission, 1978, as amended in 1981, by Loie J. Priddy and Rick Carraway are incorporated by reference without future changes are hereby designated as Inlet Hazard Areas except that the Cape Fear Inlet Hazard Area as shown on said map shall not extend northeast of the Baldhead Island marina entrance channel. In all cases, this area shall be an extension of the adjacent ocean erodible area and in no case shall the width of the inlet hazard area be less than the width of the adjacent ocean erodible area (15A NCAC 7H.0304) [Revised March 1998; Revised March 2007].
- *Marinas* - any publicly or privately owned dock, basin or wet boat storage facility constructed to accommodate more than 10 boats and providing any of the following services: permanent or transient docking spaces, dry storage, fueling facilities, haul-out facilities, and repair service. Excluded from this definition are boat ramp facilities allowing access only, temporary docking, and none of the preceding services (15A NCAC 7H.0208).
- *Measurement Line* - the line from which the ocean front setback is measured in the unvegetated beach area of environmental concern. Procedures for determining the measurement line are adopted by the Commission for each area where such a line is designated. These procedures are available from any local permit officer or the Division of Coastal Management (15A NCAC 7H.0305).
- *Normal High Water* - the ordinary extent of high tide based on site conditions such as presence and location of vegetation, which has its distribution influenced by tidal action, and the location of the apparent high tide line (15A NCAC 7H.0106).

- *Normal Water Level* - the level of water bodies with less than 6 in. of lunar tide during periods of little or no wind. It can be determined by the presence of such physical and biological indicators as erosion escarpments, trash lines, water lines, marsh grasses, and barnacles (15A NCAC 7H.0106).
- *Ocean Beaches* - lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either (15A NCAC 7H.0305):
 1. the growth of vegetation occurs
 2. a distinct change in slope or elevation alters the configuration of the landform, whichever is farther landward.
- *Ocean Erodible Area* - the area in which there exists a substantial possibility of excessive erosion and significant shoreline fluctuation. The seaward boundary of this area is the normal low water line. The landward extent of this area is determined as follows (15A NCAC 7H.0304) [Revised March 1998; Revised March 2005; Revised March 2007]:
 1. a distance landward from the first line of stable natural vegetation to the recession line that would be established by multiplying the long-term annual erosion rate times 60, provided that, where there has been no long-term erosion or the rate is less than 2 ft/yr, this distance shall be set at 120 ft landward from the first line of stable natural vegetation. For the purposes of 15A NCAC 7H.0304, the erosion rates shall be the long-term average based on available historical data. The current long-term average erosion rate data for each segment of the North Carolina coast is depicted on maps entitled "Long Term Annual Shoreline Change Rates" updated through 1998, and approved by the Coastal Resources Commission on January 29, 2004 (except as such rates may be varied in individual contested cases, declaratory or interpretive rulings). The maps are available without cost from any local permit officer or the Division of Coastal Management.
 2. a distance landward from the recession line established above to the recession line that would be generated by a storm having a 1 percent chance of being equaled or exceeded in any given year.
- *Ocean Hazard Areas* - beaches, frontal dunes, inlet lands, and other areas in which geologic, vegetative and soil conditions indicate a substantial possibility of excessive erosion or flood damage. The ocean hazard system of AECs (Areas of Environmental Concern) contain all of the following areas (15A NCAC 7H.0304) [Added March 2005; Citation Revised March 2007]:
 - ocean erodible areas
 - high hazard flood areas
 - inlet hazard areas
 - unvegetated beach areas.
- *Outstanding Resource Waters (ORW)* - those estuarine waters and public trust areas classified by the N.C. Environmental Management Commission pursuant to Title 15A, Subchapter 2B.0216 of the N.C. Administrative Code as Outstanding Resource Waters (ORW) upon finding that such waters are of exceptional state or national recreational or ecological significance. In those estuarine waters and public trust areas classified as ORW by the Environmental Management Commission (EMC), no permit required by the Coastal Area Management Act will be approved for any project which would be inconsistent with applicable use standards adopted by the CRC, EMC, or Marine Fisheries Commission (MFC) for estuarine waters, public trust areas, or coastal wetlands. For development activities not covered by specific use standards, no permit will be issued if the activity would, based on site specific information, materially degrade the water quality or outstanding resource values unless such degradation is temporary (15A NCAC 7H.0208).
- *Primary Dunes* - the first mounds of sand located landward of the ocean beaches having an elevation equaled to the mean flood level (in a storm having a 1 percent chance of being equaled or exceeded in any given year) for the area plus 6 ft. The primary dune extends landward to the lowest elevation in the depression behind that same mound of sand (commonly referred to as the dune trough) (15A NCAC 7H.0305) [Revised March 2003]
- *Primary Nursery Areas* - those areas in the estuarine system where initial post larval development of finfish and crustaceans takes place. They are usually located in the uppermost sections of a system where populations are uniformly early juvenile stages. They are officially designated and described by the N.C. Marine Fisheries

Commission in 15A NCAC 3B.1405 and by the N.C. Wildlife Resources Commission in 15A NCAC 10C.0110 (15A NCAC 7H.0208).

- *Protected Animal* - a species of wild animal designated by the Wildlife Resources Commission as endangered, threatened, or of special concern (NCGS 113-331).
- *Protected Animal List* - any one of the lists of North Carolina animal species that are endangered, threatened, or of special concern (NCGS 113-331).
- *Public Trust Areas* - all waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of state jurisdiction; all natural bodies of water subject to measurable lunar tides and lands thereunder to the mean high water mark; all navigable natural bodies of water and lands thereunder to the mean high water level or mean water level as the case may be, except privately-owned lakes to which the public has no right of access; all water in artificially created bodies of water containing significant public fishing resources or other public resources which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; and all waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication, or any other means. In determining whether the public has acquired rights in artificially created bodies of water, all of the following factors are considered (15A NCAC 7H.0207):
 1. the use of the body of water by the public
 2. the length of time the public has used the area
 3. the value of public resources in the body of water
 4. whether the public resources in the body of water are mobile to the extent that they can move into natural bodies of water
 5. whether the creation of the artificial body of water required permission from the state
 6. the value of the body of water to the public for navigation from one public area to another.
- *Research Reserve* - a group of areas or components, each of which may include all or the key land and water portion of an estuary and adjacent transitional areas and uplands, constituting to the extent feasible a natural unit, set aside as a natural field laboratory to provide long-term opportunities for research, education, and interpretation of the ecological relationships within the area. The Coastal Reserve includes the Estuarine Research Reserve (15A NCAC 7O.0102).
- *Reserve* - any area designated pursuant to 15A NCAC Subchapter 7O (15A NCAC 7O.0102) [Revised March 1998].
- *Unvegetated Beach Area* - beach areas within the Ocean Hazard Area where no stable natural vegetation is present that have been designated as an unvegetated beach area on either a permanent or temporary basis as follows (15A NCAC 7H.0304) [Revised March 1998; Revised March 2005; Revised March 2007]:
 1. an area appropriate for permanent designation as an unvegetated beach area is a dynamic area that is subject to rapid unpredictable landform change from wind and wave action. The areas in this category are designated following detailed studies by the Coastal Resources Commission. These areas are designated on maps approved by the Commission and available without cost from any local permit officer or the Division of Coastal Management
 2. an area that is suddenly unvegetated as a result of a hurricane or other major storm event may be designated as an unvegetated beach area for a specific period of time. At the expiration of the time specified by the Commission, the area returns to its pre-storm designation. Areas appropriate for such designation are those in which vegetation has been lost over such a large land area that extrapolation of the vegetation line is inappropriate.

The Commission designates as temporary unvegetated beach areas those oceanfront areas on Hatteras Island west of the new inlet breach in Dare County in which the vegetation line as shown on Dare County orthophotographs dated February 4, 2002 through February 10, 2002 was destroyed as a result of Hurricane Isabel on September 18, 2003 and the remnants of which were subsequently buried by the construction of an emergency berm. This designation shall continue until such time as stable, natural vegetation has reestablished or until the area is permanently designated as an unvegetated beach area.

- *Vegetation Line* - the first line of stable natural vegetation, which is used as the reference point for measuring oceanfront setbacks. This line represents the boundary between the normal dry-sand beach, which is subject to constant flux due to waves, tides, storms, and wind, and the more stable upland areas. It is generally located at or immediately oceanward of the seaward toe of the frontal dune or erosion escarpment. In areas where there is no stable natural vegetation present, this line is established by connecting or extending the lines from the nearest adjacent vegetation on either side of the site and by extrapolating (by either on-ground observation or by aerial photographic interpretation) to establish the line. In areas within the boundaries of a large scale beach nourishment or spoil deposition project, the vegetation line that existed prior to the onset of project construction shall be used as the vegetation line for determining oceanfront setbacks after the project is completed except for those circumstances described under Paragraph (g) of this Rule for projects constructed after September 1, 2000. A project shall be considered large scale when: (15A NCAC 7H.0305) [Revised March 2003]
 1. it places more than a total volume of 200,000 cubic yards of sand at an average ratio of more than 50 cubic yards of sand per linear foot of shoreline; or
 2. it is a Hurricane Protection project constructed by the U.S. Army Corps of Engineers.
- *Wild Animal* - any native or once-native nongame amphibian, bird, crustacean, fish, mammal, mollusk or reptile not otherwise legally classified by statute or regulation such as game and fur bearing animals, except those inhabiting and depending upon coastal fishing waters, marine and estuarine resources, marine mammals found in coastal fishing waters, sea turtles found in coastal fishing waters, and those declared to be pests under the Structural Pest Control Act of North Carolina of 1955 or the North Carolina Pesticide Law of 1971. Nothing in this definition is intended to abrogate NCGS 113-132(a) or (c), confer jurisdiction upon the Wildlife Resources Commission as to any subject exclusively regulated by any other agency, or to authorize the Wildlife Resources Commission by its regulations to supersede any valid provision of law or regulation administered by any other agency (NCGS 113-331).

NATURAL RESOURCES MANAGEMENT GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS

REFER TO CHECKLIST ITEMS:

Missing Checklist Items Dredging Land Management Water Resource Management Wildlife	NR.2.1.NC. NR.5.1.NC. and NR.5.2.NC. NR.10.1.NC. through NR.10.5.NC. NR.15.1.NC. through NR.15.14.NC. NR.20.1.NC. and NR.20.2.NC.
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GUIDANCE FOR APPENDIX USERS

REFER TO APPENDIX NUMBERS:	REFER TO APPENDIX TITLES:
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5-1 5-2	North Carolina's Listed Wildlife Species Protected Plants
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COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>NR.2.</p> <p>MISSING CHECKLIST ITEMS</p> <p>NR.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>NR.5.</p> <p>DREDGING</p> <p>NR.5.1.NC. Hydraulic dredging operations in estuarine waters, coastal wetlands, and public trust areas must meet specific conditions (15A NCAC 7H.0208 (b) (2)).</p> <p>NR.5.2.NC. Materials from the excavation or maintenance of navigation channels must be used in a beneficial way wherever practicable (15A NCAC 7M.1101 and 7M.1102).</p>	<p>Verify that the terminal end of the dredge pipeline is positioned at a distance sufficient to preclude erosion of the containment dike and a maximum distance from spillways to allow adequate settlement of suspended solids.</p> <p>Verify that dredge spoil is either confined on high ground by adequate retaining structures or, if the material is suitable, deposited on beaches for renourishment.</p> <p>(NOTE: Publicly funded projects will be considered by review agencies on a case-by-case basis with respect to dredging methods and spoil disposal.)</p> <p>Verify that confinement of excavated materials is on high ground landward of regularly and irregularly flooded marshland and with adequate soil stabilization measures to prevent entry of sediments into adjacent water bodies or marsh.</p> <p>Verify that effluent from diked areas receiving disposal from hydraulic dredging operations are contained by pipe, trough, or similar device to a point waterward of emergent vegetation or, where local conditions require, below mean low water.</p> <p>Verify that, when possible, effluent from diked disposal areas is returned to the area being dredged.</p> <p>Verify that a water control structure is installed at the intake end of the effluent pipe.</p> <p>Verify that dredge spoil from closed shellfish waters and effluent from diked disposal areas used when dredging in closed shellfish waters is returned to the closed shellfish waters.</p> <p>Verify that clean, beach quality material dredged from navigation channels within the active near shore, beach, or inlet shoal systems is not removed permanently from these areas unless no practicable alternative exists.</p> <p>(NOTE: Preferably, this dredged material is disposed of on the ocean beach or shallow active near shore area where environmentally acceptable and compatible with other uses of the beach.)</p> <p>(NOTE: Material in disposal sites not privately owned will be available to anyone proposing a beneficial use.)</p> <p>(NOTE: Restoration of estuarine waters and public trust areas adversely impacted by existing disposal sites or practices is in the public interest and shall be</p>

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
	encouraged at every opportunity.)

COMPLIANCE CATEGORY: NATURAL RESOURCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>NR.10.</p> <p>LAND MANAGEMENT</p> <p>NR.10.1.NC. Development activities must not involve the removal or relocation of dunes in ocean hazard areas (15A NCAC 7H.0306 (b)) [Revised March 2005].</p> <p>NR.10.2.NC. Dune establishment and stabilization activities must meet specific requirements (15A NCAC 7H.0308 (b)).</p>	<p>(NOTE: The ocean hazard areas include beaches, frontal dunes, inlet lands, and other areas in which geologic, vegetative, and soil conditions indicate a substantial possibility of excessive erosion or flood damage.)</p> <p>Verify that primary or frontal dune sand or vegetation thereon is not removed or relocated which would adversely affect the integrity of the dune.</p> <p>Verify that other dunes within the ocean hazard area are not disturbed unless the development is otherwise impracticable, and any disturbance of any other dunes is allowed only to the extent allowed by the requirements for dune establishment or stabilization.</p> <p>Verify that any new dune established is aligned to the greatest extent possible with existing adjacent dune ridges and is of the same general configuration as adjacent natural dunes.</p> <p>Verify that existing primary and frontal dunes are not, except for beach nourishment and emergency situations, broadened or extended in an oceanward direction.</p> <p>Verify that adding to dunes is accomplished in such a manner that damage to existing vegetation is minimized.</p> <p>Verify that filled areas are immediately replanted or temporarily stabilized until planting can be successfully completed.</p> <p>Verify that sand used to establish or strengthen dunes is of the same general characteristics as the sand in the area in which it is to be placed.</p> <p>Verify that no new dunes are created in inlet hazard areas.</p> <p>Verify that sand held in storage in any dune, other than the frontal or primary dune, is redistributed within the area of environmental concern (AEC) provided it is not placed any farther oceanward than the crest of a primary dune or landward toe of a frontal dune.</p> <p>Verify that no disturbance of a dune area is allowed when other techniques of construction can be used and alternative site locations exist to avoid unnecessary dune impacts.</p>

**COMPLIANCE CATEGORY:
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<p>NR.10.3.NC. Development of structural accessways across dunes must meet specific requirements (15A NCAC 7H.0308(c)) [Revised March 1998; Revised March 2007].</p>	<p>Verify that structural accessways across primary dunes are designed and constructed in a manner that entails negligible alteration on the primary dune.</p> <p>(NOTE: An accessway is conclusively presumed to entail negligible alteration of a primary dune if all of the following criteria are met:</p> <ul style="list-style-type: none"> - the accessway is exclusively for pedestrian use - the accessway is less than 6 ft in width - the accessway is raised on posts or pilings of 5 ft or less depth, so that wherever possible only the posts or pilings touch the frontal dune; where this is deemed impossible, the structure touches the dune only to the extent absolutely necessary - any areas of vegetation that are disturbed are revegetated as soon as feasible. <p>In no case is an accessway permitted if it will diminish the dune's capacity as a protective barrier against flooding and erosion.)</p> <p>(NOTE: Public fishing piers are not deemed to be prohibited by the above requirement, provided all other applicable standards are met.)</p> <p>Verify that, in order to avoid weakening the protective nature of primary and frontal dunes, a structural accessway (such as a Hatteras ramp) is provided for any off-road vehicle or emergency vehicle access, and such accessways are no greater than 10 ft in width and constructed of wooden sections fastened together over the length of the affected dune area.</p>
<p>NR.10.4.NC. Relocation of structures in ocean hazard areas require a permit (15A NCAC 7H.0306(j)) [Added March 2005; Citation Revised March 2008].</p>	<p>Verify that all relocation of structures in ocean hazard areas obtain a permit.</p> <p>Verify that structures including septic tanks and other essential accessories relocated entirely with non-public funds are relocated the maximum feasible distance landward of the present location</p> <p>Verify that septic tanks are not located seaward of the primary structure</p>
<p>NR.10.5.NC. Imminently threatened structures must be relocated or dismantled within 2 years (15A NCAC 7H.0306(k)) [Added March 2005; Citation Revised March 2007].</p>	<p>Verify that the structure is relocated or dismantled within 2 years of the time when it becomes imminently threatened, and in any case upon its collapse or subsidence.</p> <p>(NOTE: If natural shoreline recovery or beach renourishment takes place with 2 years of the time the structure becomes imminently threatened, then the structure need not be relocated or dismantled.)</p>

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<p>NR.15.</p> <p>WATER RESOURCE MANAGEMENT</p> <p>NR.15.1.NC. Proposed marinas in coastal wetlands, estuarine waters, and public trust areas must meet specific requirements (15A NCAC 7H.0208(b)(5))</p>	<p>(NOTE: There are a number of general permits available for certain types of activities in estuarine and public trust water areas of environmental concerns (AEC). The requirements in this section detail the standards that local and state authorities must meet prior to issuing permits for the activities described. Local authorities will issue permits for minor activities; state authorities (the Coastal Resources Commission) will issue permits for major activities.)</p> <p>Verify that marinas are sited in nonwetland areas or in deep waters (not requiring dredging) and do not disturb valuable shallow water, submerged aquatic vegetation, or wetland habitats, except for dredging necessary for access to high-ground sites.</p> <p>Verify that marinas that require dredging are not located in primary nursery areas or in areas that require dredging through primary nursery areas for access.</p> <p>Verify that, to minimize coverage of public trust areas by docks and moored vessels, dry storage marinas are used where feasible.</p> <p>Verify that, to protect water quality of shell fishing areas, marinas are not located within areas where shellfish harvesting for human consumption is a significant existing use or adjacent to such areas if shellfish harvest closure is anticipated to result from the location of the marina.</p> <p>Verify that marina basins are designed to promote flushing through both of the following design criteria:</p> <ul style="list-style-type: none"> - basin and channel depths gradually increase toward open water and are never deeper than the waters to which they connect - when possible, an opening is provided at opposite ends of the basin to establish flow-through circulation. <p>Verify that marinas are designed to minimize adverse effects on navigation and public use of public trust areas.</p> <p>Verify that marinas are located and constructed so as to avoid adverse impacts on navigation throughout all federally maintained channels and their immediate boundaries.</p> <p>Verify that open water marinas are not enclosed within breakwaters that preclude circulation sufficient to maintain water quality.</p> <p>Verify that marinas requiring dredging provide acceptable areas to accommodate</p>

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<p>NR.15.2.NC. Proposed navigation channels, canals, and boat basins in coastal wetlands, estuarine waters, and public trust areas must meet specific requirements (15A NCAC 7H.0208(b)(1)).</p>	<p>disposal needs for future maintenance dredging.</p> <p>Verify that marinas post a notice prohibiting the discharge of any waste from boat toilets and explaining the availability of information on local pump-out services.</p> <p>Verify that boat maintenance areas are designed so that all scraping, sandblasting, and painting is done over dry land with adequate containment devices to prevent entry of waste materials into adjacent waters.</p> <p>Verify that navigation channels, canals, and boat basins are aligned or located so as to avoid primary nursery areas highly productive shellfish beds, beds of submerged aquatic vegetation, or significant areas of regularly or irregularly flooded coastal wetlands.</p> <p>(NOTE: Navigation channels and canals may be allowed through narrow fringes of regularly and irregularly flooded coastal wetlands if the loss of wetlands will have no significant adverse impacts on fishery resources, water quality, or adjacent wetlands, and, if there is no reasonable alternative that would avoid the wetland losses.)</p> <p>Verify that all spoil material from new construction is confined landward of regularly and irregularly flooded coastal wetlands and stabilized to prevent entry of sediments into the adjacent water bodies or marsh.</p> <p>Verify that spoil from maintenance of channels and canals through irregularly flooded wetlands is placed on nonwetland areas, remnant spoil piles, or disposed of by an acceptable method having no significant, long term wetland impacts.</p> <p>Verify that widths of the canals and channels are the minimum required to meet the applicant's needs and provide adequate water circulation.</p> <p>Verify that boat basin design maximizes water exchange by having the widest possible opening and the shortest practical entrance canal.</p> <p>Verify that depths of boat basins decrease from the waterward end inland.</p> <p>Verify that any canal or boat basin is excavated no deeper than the depth of the connecting channels.</p> <p>Verify that canals for multiple residential developments all have the following:</p> <ul style="list-style-type: none"> - no septic tanks unless they meet standards set by the Division of Environmental Management and the Division of Environmental Health - no untreated or treated point source discharge - stormwater routing and retention areas such as settling basins and grassed swales.

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<p>NR.15.3.NC. Proposed drainage ditches in coastal wetlands, estuarine waters, and public trust areas must meet specific requirements (15A NCAC 7H.0208(b)(3)).</p>	<p>Verify that canals are either straight or meandering with no right angle corners.</p> <p>Verify that canals are designed so as not to create an erosion hazard to adjoining property.</p> <p>Verify that drainage ditches located through any marshland do not exceed 6 ft wide by 4 ft deep (from ground surface), unless otherwise approved.</p> <p>Verify that spoil derived from the construction or maintenance of drainage ditches through regularly flooded marsh is placed landward of these marsh areas in a manner that insures entry of sediment into the water or marsh will not occur.</p> <p>Verify that spoil derived from the construction or maintenance of drainage ditches through irregularly flooded marshes is placed on nonwetlands wherever feasible.</p> <p>(NOTE: Nonwetland areas include relic disposal sites.)</p> <p>Verify that excavation of new ditches through high ground takes place landward of a temporary earthen plug or other methods to minimize siltation to adjacent water bodies.</p> <p>Verify that drainage ditches do not have a significant adverse effect on primary nursery areas, productive shellfish beds, beds of submerged aquatic vegetation, or other documented important estuarine habitat.</p>
<p>NR.15.4.NC. Proposed nonagricultural drainage ditches in coastal wetlands, estuarine waters, and public trust areas must meet specific requirements (15A NCAC 7H.0208(b)(4)).</p>	<p>Verify that drainage ditches are designed so that restrictions in the volume or diversions of flow are minimized to both surface and groundwater.</p> <p>Verify that drainage ditches provide for the passage of migratory organisms by allowing free passage of water of sufficient depth.</p> <p>Verify that drainage ditches do not create stagnant water pools or significant changes in the velocity of flow.</p> <p>Verify that drainage ditches do not divert or restrict water flow to important wetlands or marine habitats.</p>
<p>NR.15.5.NC. Proposed docks and piers in coastal wetlands, estuarine waters, and public trust areas must meet specific requirements (15A NCAC 7H.0208(b)(6)).</p>	<p>Verify that docks and piers do not significantly interfere with water flows.</p> <p>Verify that, to preclude the adverse effects of shading coastal wetlands vegetation, docks and piers built over coastal wetlands do not exceed 6 ft in width.</p> <p>Verify that platforms associated with residential piers are at the waterward end, and do not exceed a total area of 500 ft² with no more than 6 ft of the dimension</p>

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<p>NR.15.6.NC. Proposed bulkheads and shore stabilization measures in coastal wetlands, estuarine waters, and public trust areas must meet specific requirements (15A NCAC 7H.0208(b)(7)).</p> <p>NR.15.7.NC. Proposed beach creation or maintenance in coastal wetlands, estuarine waters, and public trust areas must meet specific requirements (15A NCAC 7H.0208(b)(8)).</p>	<p>perpendicular to the marsh edge extending over coastal wetlands.</p> <p>Verify that piers are designed to minimize adverse effects on navigation and public use of waters by meeting the following conditions:</p> <ul style="list-style-type: none"> - not extending beyond established pier length along the same shoreline for similar use; does not apply to piers 200 ft or less in length unless necessary to avoid unreasonable interference with navigation or other uses of waters by the public - not extending into the channel portion of the water body - not extending more than one-third the width of a natural water body or man-made canal or basin; does not apply in areas where the U.S. Army Corps of Engineers, or a local government in consultation with the Corps, has established an official pier-head line. <p>Verify that pier alignments along Federally maintained channels meet Corps District guidelines.</p> <p>Verify that piers do not interfere with access to any riparian property and have a minimum setback of 15 ft between any part of the pier and the adjacent property owner's areas of riparian access.</p> <p>Verify that docks and piers do not significantly interfere with shellfish franchises or leases.</p> <p>Verify that bulkhead alignment, for shoreline stabilization, approximates mean high water or normal water level.</p> <p>Verify that bulkheads are constructed landward of significant marshland or marshgrass fringes.</p> <p>Verify that, when possible, sloping rip-rap, gabions, or vegetation is used rather than vertical seawalls.</p> <p>Verify that material placed in the water and along the shoreline is clean and free from pollutants and highly erodible finger material.</p> <p>Verify that grain size is equal to or larger than that found naturally at the site.</p> <p>Verify that material is not placed on any coastal wetlands, beds of submerged aquatic vegetation, or any submerged bottom with significant shellfish resources.</p> <p>Verify that beach construction does not create the potential for filling adjacent or nearby navigation channels, canals, or boat basins.</p>

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<p>NR.15.8.NC. Proposed wooden and riprap groins in coastal wetlands, estuarine waters, and public trust areas must meet specific requirements (15A NCAC 7H.0208(b)(9)).</p>	<p>Verify that beach construction does not violate water quality standards.</p> <p>Verify that groins do not extend more than 25 ft waterward of the mean high water or normal water level unless a longer structure is justified by site specific conditions and sound engineering and design principals.</p> <p>Verify that groins are set back a minimum of 15 ft from adjoining property lines and pose no threat to navigation.</p> <p>Verify that the height of groins does not exceed 1 ft above mean high water or the normal water level.</p> <p>Verify that riprap material used for groin construction is free from loose dirt or any other pollutant in other than nonharmful quantities and of a size sufficient to prevent its movement from the site by wave and current action.</p>
<p>NR.15.9.NC. Proposed development in estuarine shoreline and public trust shoreline areas must meet specific requirements (15A NCAC 7H.0209(d)) [Revised March 2002].</p>	<p>Verify that all development projects, proposals, and designs preserve and do not weaken or eliminate natural barriers to erosion, including, but not limited to, peat marshland, resistant clay shorelines, and cypress-gum protective fringe areas adjacent to vulnerable shorelines.</p> <p>Verify that all development projects, proposals, and designs limit the construction of impervious surfaces and areas not allowing natural drainage to only so much as is necessary to adequately service the major purpose or use for which the lot is to be developed.</p> <p>Verify that impervious surfaces do not exceed 30 percent of the ABC area of the lot, unless the applicant can effectively demonstrate, through innovative design, that the protection provided by the design would be equal to or exceed the protection by the 30 percent limitation</p> <p>Verify that within the Coastal Shorelines category (estuarine and public trust shorelines AEC's, new development, with the exception of water dependent uses, are located a distance of 30 feet landward of the normal water level or the normal high water level.</p> <p>Verify that all development projects, proposals, and designs provide for a buffer zone along the margin of the estuarine water that is sufficient to confine visible siltation within 25 percent of the buffer zone nearest the land disturbing development.</p> <p>Verify that no development project proposal or design permits an angle for graded slopes or fill which is greater than an angle which can be retained by vegetative cover or other erosion-control devices or structures.</p> <p>Verify that all development projects, proposals, and designs which involve</p>

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		<p>uncovering more than one acre of land plant a ground cover sufficient to restrain erosion within 30 working days of completion of the grading (provided that this does not apply to clearing land for the purpose of forming a reservoir later to be inundated).</p> <p>Verify that development does not have a significant adverse impact on estuarine and ocean resources.</p> <p>(NOTE: Significant adverse impacts include but are not limited to development that would directly or indirectly impair water quality standards, increase shoreline erosion, alter coastal wetlands or Submerged Aquatic Vegetation (SAV), deposit spoils waterward of normal water level or normal high water, or cause degradation of shellfish beds.)</p> <p>Verify that development does not interfere with existing public rights of access to, or use of, navigable waters or public resources.</p> <p>Verify that development does not cause irreversible damage to valuable, historic architectural or archaeological resources as documented by the local historic commission or the North Carolina Department of Cultural Resources.</p> <p>Verify that established common-law and statutory public rights of access to the public trust lands and waters in estuarine areas are not eliminated or restricted, and that development does not encroach upon public accessways nor limit the intended use of the accessways.</p> <p>Verify that within the Coastal Shorelines category (estuarine and public trust shoreline AECs), new development is located a distance of 30 feet landward of the normal water level or normal high water level, with the exception of the following:</p> <ul style="list-style-type: none"> - water-dependent uses - pile-supported signs (in accordance with local regulations) - post- or pile-supported fences - elevated, slatted, wooden boardwalks exclusively for pedestrian use and six feet in width or less - crab shedders, if uncovered with elevated trays and no associated impervious surfaces except those necessary to protect the pump - decks/observation decks limited to slatted, wooden, elevated and unroofed decks that are not singularly or collectively exceed 200 square feet - grading, excavation and landscaping with no wetland fill except when required by a permitted shoreline stabilization project - development over existing impervious surfaces, provided that the existing impervious surface is not increased and the applicant designs the project to comply with the intent of the rules to the maximum extent feasible.
NR.15.10.NC. shoreline erosion control	Ocean control	Verify that permanent erosion control structures are not used.

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activities must meet specific requirements (15A NCAC 7H.0308 (a) (1) through (3)) [Revised March 1998; Revised March 2007].	<p>(NOTE: Such structures include: bulkheads, seawalls, revetments, jetties, groins, and breakwaters.)</p> <p>Verify that shoreline erosion response projects are not constructed in beach or estuarine areas that sustain substantial habitat for important fish and wildlife species unless adequate mitigation measures are incorporated into project design.</p> <p>Verify that project construction is timed to minimize adverse effect on biological activity.</p> <p>Verify that prior to completing any erosion response project, all exposed remnants of, or debris from, failed erosion control structures are removed.</p> <p>Verify that temporary erosion control structures meet the following criteria:</p> <ul style="list-style-type: none"> - are limited to sandbags placed above mean high water and parallel to the shore and are used: <ul style="list-style-type: none"> - only to protect imminently threatened roads and associated right of ways, and buildings and associated septic systems (a structure is considered imminently threatened if its foundation septic system, or right-of-way in the case of roads, is less than 20 ft away from the erosion scarp) - to protect only the principal structure and its associated septic system, but not such appurtenances as gazebos, decks, or any amenity allowed as an exception to the erosion setback requirement - do not extend more than 20 ft past the sides of the structure to be protected - the landward side of temporary erosion control structures is not located more than 20 ft seaward of the structure to be protected or the right-of-way in the case of roads - remain in place for: <ul style="list-style-type: none"> - up to 2 yr after the date of approval if protecting a building with a total floor area of 5000 ft² or less - up to 5 yr if the building has a total floor area of more than 5000 ft² - up to 5 yr if protecting a bridge or a road - up to 5 yr regardless of size of the structure if the community in which it is located is actively pursuing a beach nourishment project - once the temporary structure is unnecessary due to relocation or removal of the threatened structure, the structure is removed within 30 days - removal is not required if covered by dunes with vegetation sufficient to be considered stable and natural - remnants of any damaged temporary structure are removed - sandbags used to construct a structure are tan in color and 3 to 5 ft wide and 7 to 15 ft long when measured flat - base width does not exceed 20 ft, and the height does not exceed 6 ft - soldier pilings and other types of devices to anchor sandbags are not used - existing sandbag structures can be maintained provided permitted dimensions are not exceeded - existing sandbag structures properly installed prior to 1 May 1995 are allowed to remain in place with pertinent time periods beginning on 1 May 1995.

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<p>NR.15.11.NC. When using coastal areas for military training, the facility must meet specific requirements (15A NCAC 7M.1001 and 7M.1002).</p>	<p>(NOTE: Temporary erosion control structures may be placed seaward of a septic system when there is no alternative to relocate it on the same or adjoining lot so that it is landward of or in line with the structure being protected.)</p> <p>Verify that sand used for beach nourishment is compatible with existing grain size and type and is taken only from those areas where resulting environmental impacts will be minimal.</p> <p>Verify that, to the maximum extent practicable, use of water and wetland-based target areas for military training does not infringe on public trust rights, cause damage to public trust resources, violate existing water quality standards, or result in public safety hazards.</p> <p>Verify that all public trust waters subject to surface water restrictions pursuant to 33 USCS 3 for use in military training are opened to commercial fishing at established times appropriate for harvest of fisheries resources within those areas.</p> <p>Verify that, when laser weaponry is used, the area of restricted surface waters is at least as large as the recommended laser safety zone.</p> <p>Verify that water quality is tested periodically in surface water restricted areas surrounding such targets and results are reported to the Department.</p>
<p>NR.15.12.NC. The management of Coastal Reserves and National Estuarine Research Reserves must meet specific requirements (15A NCAC 7O.0105 and 7O.0202) [Revised March 1998; Revised March 2007].</p>	<p>(NOTE: The North Carolina Coastal Reserve includes the following components:</p> <ul style="list-style-type: none"> - Zeke's Island - Rachel Carson - Currituck Banks - Masonboro Island - Permuda Island - Buxton Woods - Bald Head Woods - Kitty Hawk Woods - Bird Island - Emily and Richardson Preyer Buckridge. <p>The North Carolina National Estuarine Research Reserve includes the following:</p> <ul style="list-style-type: none"> - Zeke's Island - Rachel Carson - Currituck Banks - Masonboro Island.) <p>Verify that the essential natural character of the reserve is maintained.</p> <p>Verify that traditional recreational uses within each component continue only as long as they do not disrupt the natural integrity of the reserve or any research or</p>

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<p>NR.15.13.NC. Construction of wetland, stream and buffer mitigation sites by the North Carolina Ecosystem Enhancement Program or the North Carolina Wetlands Restoration Program must be permitted (15A NCAC</p>	<p>educational projects.</p> <p>(NOTE: Incompatible traditional uses include:</p> <ul style="list-style-type: none"> - fishing, hunting, or trapping activities not allowed by state rules - target shooting - hydraulic clam dredging within reserve boundaries - use of vehicles off designated corridors at components where vehicles are allowed for upland transportation according to the management plan - production of noise disruptive to local wildlife and the aesthetic enjoyment of the reserve as a natural area.) <p>Verify that a research project or research equipment in place at the reserve is not disturbed.</p> <p>Verify that camping or any form of habitation, whether on the uplands, wetlands, or waters within Reserve boundaries, has written permission of the Division of Coastal Management.</p> <p>Verify that personal property not authorized by the management agency is not placed within the boundaries of the reserve for more than 2 consecutive days.</p> <p>Verify that live animals, except those allowed by state hunting and fishing rules as they apply to the reserve, or vegetation are not disturbed or removed unless as part of a research or educational project approved by the management agency.</p> <p>Verify that scientific research or collection of natural materials within the reserve is not begun without written permission from the management agency.</p> <p>Verify that no activity is undertaken which might pollute any stream or body of water in the Reserve.</p> <p>(NOTE: Acts of pollution include:</p> <ul style="list-style-type: none"> - deposition of solid materials not indigenous to the local coastal ecosystem - discharge of liquids other than uncontaminated estuarine water.) <p>Verify that no other acts or uses that are detrimental to maintenance of the property in its natural condition are undertaken, including, but not limited to, disturbances of soil, mining, commercial or industrial uses, timber harvesting, ditching and draining, and deposition of waste materials.</p> <p>Verify that the division of Coastal Management (DCM) is contacted for approval of development of wetland, stream and buffer mitigation sites.</p> <p>(NOTE: This general permit shall be applicable only for mitigation site proposals made by the North Carolina Ecosystem Enhancement Program or North Carolina Wetlands Restoration Program. The general permit does not apply within the Ocean Hazard System of Areas of Environmental Concern (AEC) or waters adjacent to these AECs with the exception of those portions of shoreline within</p>

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<p>7H.2601 through 2605) [Added March 2006].</p>	<p>the Inlet Hazard Area AEC that feature characteristics of Estuarine Shorelines.)</p> <p>(NOTE: This general permit authorizes only the following activities associated with the construction of wetland, stream or buffer restoration:</p> <ul style="list-style-type: none"> the removal of accumulated sediments the installation, removal and maintenance of small water control structures, dikes, and berms the installation of current deflectors the placement of in-stream habitat structures modifications of the stream bed or banks to restore or create stream meanders the backfilling of artificial channels and drainage ditches the removal of existing drainage structures the construction of small nesting islands the construction of open water areas the construction of oyster habitat over unvegetated bottom in tidal waters the planting of submerged aquatic vegetation activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species mechanized land clearing to remove non-native invasive exotic or nuisance vegetation; and other related activities. <p>Verify that there is no interference with navigation or use of the waters by the public.</p> <p>(NOTE: This permit does not eliminate the need to obtain any other required state, local or federal authorization.)</p>
<p>NR.15.14.NC. Beach bulldozing as an ocean shoreline erosion response must meet specific requirements (15A NCAC 7H.0308 (a) (4)) [Added March 2007].</p>	<p>(NOTE: Beach bulldozing is defined as the process of moving natural beach material from any point seaward of the first line of stable vegetation to create a protective sand dike or to obtain material for any other purpose.)</p> <p>Verify that beach bulldozing as an erosion response meets the following conditions:</p> <ul style="list-style-type: none"> - the area on which this activity is being performed maintains a slope of adequate grade so as to not endanger the public or the public's use of the beach and follows the pre-emergency slope as closely as possible - the movement of material utilizing a bulldozer, front end loader, backhoe, scraper, or any type of earth moving or construction equipment does not exceed one foot in depth measured from the pre-activity surface elevation - the activity does not exceed the lateral bounds of the applicant's property unless he has permission of the adjoining land owner(s) - CAMA Major Development and State Dredge and Fill Permit is obtained for movement of material from seaward of the mean low water line require - the activity does not increase erosion on neighboring properties and does not have an adverse effect on natural or cultural resources - the activity protects threatened on-site waste disposal systems as well as the threatened structure's foundations.

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<p>NR.20.</p> <p>WILDLIFE</p> <p>NR.20.1.NC. Animals on a protected wild animal list must be protected (NCGS 113-337) [Revised March 2007].</p> <p>NR.20.2.NC. Protected plant species must not be disturbed or removed (NCGS 106-202.19 (a) (1) and (2)) [Added February 2000].</p>	<p>Verify that the facility does not allow any person to take, possess, transport, sell, barter, trade, exchange, export, or offer for sale, barter, trade, exchange or export, or give away for any purpose including advertising or other promotional purpose animal on a protected wild animal list (see Appendix 5-1), except as authorized according to the regulations of the Commission.</p> <p>(NOTE: See Appendix 5-2 for protected plant lists.)</p> <p>Verify that the facility does not allow anyone to uproot, dig, take or otherwise disturb or remove for any purpose any plant on a protected plant list, without a written permit from the owner of the land on which the plant is located, and which is dated and valid for no more than 180 days and indicates the species or higher taxon of plants for which permission is granted.</p> <p>(NOTE: An exception is allowed for the incidental disturbance of protected plants during agricultural, forestry or development operations, so long as the plants are not collected for sale or commercial use.)</p> <p>Verify that the facility does not allow anyone to sell, barter, trade, exchange, export, offer for sale, barter, trade, exchange or export or give away for any purpose (including advertising or other promotional purpose), any plant on a protected plant list, except as authorized according to the rules and regulations of the Board.</p>

Appendix 5-1

North Carolina's Listed Wildlife Species

(Source: North Carolina's State and Federally Listed Wildlife Species;
<http://www.ncenvirothon.org/high%20school%20resources/Wildlife/2004%20NC%20endangered%20species.pdf>
 [Revised March 1998; Revised March 2003; Revised March 2005;
 Revised March 2007; Web Site Revised March 2009]

E - Endangered. Any native or once native species of wild animal whose continued existence as a viable component of the state's fauna is determined by the Wildlife Resources Commission to be in jeopardy or any wild animal determined to be an "endangered animal" pursuant to the Endangered Species Act.

T - Threatened. Any native or once native species of wild animal that is likely to become an endangered species within the foreseeable future throughout all, or significant, portions of its range, or one that is designated "threatened" pursuant to the Endangered Species Act.

T (S/A) - Threatened due to Similarity of Appearance. Designation of a species (subspecies or population segment) as federally listed, even though not otherwise federally listed, because it so closely resembles in appearance a federally listed species that enforcement personnel would have difficulty in differentiating between the listed and unlisted species.

SC - Special Concern. Any species of wild animal native or once native to North Carolina that is determined by the North Carolina Wildlife Resources Commission to require monitoring but that may be taken under regulations adopted under the provisions of Article 25.

FSC - Federal Species of Concern. A species of concern as designated by the U.S. Fish and Wildlife Service. Further research and field study are needed to determine the conservation status. Future listing may or may not be warranted

XN - Experimental Population. Designation of introduced populations of federally listed species; it allows for greater flexibility in the management of these populations by local, state, and federal agencies.

Common Name	Scientific Name	State Status	Federal Status
Amphibians			
Carolina gopher frog	<i>Rana capito capito</i>	T	FSC
Common mudpuppy	<i>Necturus maculosus</i>	SC	
Crevice salamander	<i>Plethodon longicrus</i> (=yonahlossee pop)	SC	
Dwarf salamander [silver morph]	<i>Eurycea quadridigitata</i>	SC	
Eastern hellbender	<i>Cryptobranchus alleganiensis</i>	SC	FSC
Eastern tiger salamander	<i>Ambystoma tigrinum</i>	T	
Four-toed salamander	<i>Hemidactylium scutatum</i>	SC	
Green salamander	<i>Aneides aeneus</i>	E	FSC
Junaluska salamander	<i>Eurycea junaluska</i>	T	FSC
Longtail salamander	<i>Eurycea longicauda</i>	SC	
Mole salamander	<i>Ambystoma talpoideum</i>	SC	
Mountain chorus frog	<i>Pseudacris brachyphona</i>	SC	
Neuse River waterdog	<i>Necturus lewisi</i>	SC	
River frog	<i>Rana heckscheri</i>	SC	
Southern zigzag salamander	<i>Plethodon ventralis</i>	SC	
Wehrle's salamander	<i>Plethodon wehrlei</i>	T	
Weller's salamander	<i>Plethodon welleri</i>	SC	
Birds			
American peregrine falcon	<i>Falco peregrinus</i>	E	
Bachman's sparrow	<i>Aimophila aestivalis</i>	SC	FSC
Bachman's warbler	<i>Vermivora bachmanii</i>	E	E
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	T
Bewick's wren	<i>Thryomanes bewickii altus</i>	E	FSC
Black skimmer	<i>Rynchops niger</i>	SC	

Common Name	Scientific Name	State Status	Federal Status
Black vulture	<i>Coragyps atratus</i>	SC	
Black-capped chickadee	<i>Poecile atricapillus praticus</i>	SC	FSC
Brown creeper	<i>Certhia american a</i>	SC	
Common tern	<i>Sterna hirundo</i>	SC	
Cooper's hawk	<i>Accipiter cooperii</i>	SC	
Glossy ibis	<i>Plegadis falcinellus</i>	SC	
Gull-billed tern	<i>Sterna nilotica</i>	T	
Ivory-billed woodpecker	<i>Campephilus principalis</i>	E	E
Kirtland's warbler	<i>Dendroica kirtlandii</i>	E	E
Least tern	<i>Sterna antillarum</i>	SC	
Little blue heron	<i>Egretta caerulea</i>	SC	
Loggerhead shrike	<i>Lanius ludovicianus</i>	SC	
Northern saw-whet owl	<i>Aegolius acadicus</i> (pop)	T	FSC
Olive-sided flycatcher	<i>Contopus cooperi</i>	SC	FSC
Piping plover.	<i>Charadrius melodus melodus</i>	T	T
Red crossbill	<i>Loxia curvirostra</i> (pop)	SC	FSC
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	E
Roseate tern	<i>Sterna dougallii</i>	E	E
Snowy egret	<i>Egretta thula</i>	SC	
Tricolored heron	<i>Egretta tricolor</i>	SC	
Wood stork	<i>Mycteria americana</i>	E	E
Yellow-bellied sapsucker	<i>Sphyrapicus varius appalachiensis</i>	SC	FSC
Crustaceans.			
Broad River spiny crayfish	<i>Cambarus spicatus</i>	SC	
Chowanoke crayfish	<i>Orconectes virginienensis</i>	SC	FSC
Greensboro burrowing crayfish	<i>Cambarus catagius</i>	SC	
Hiwassee headwaters crayfish	<i>Cambarus parrishi</i>	SC	FSC
Little Tennessee River crayfish	<i>Cambarus georgiae</i>	SC	
North Carolina spiny crayfish	<i>Orconectes carolinensis</i>	SC	
Oconee stream crayfish	<i>Cambarus chaugaensis</i>	SC	
Waccamaw crayfish	<i>Procambarus braswelli</i>	SC	
Fishes			
American brook lamprey	<i>Lampetra appendix</i>	T	
Atlantic sturgeon	<i>Acipenser oxyrinchus</i>	SC	
Banded sculpin	<i>Cottus carolinae</i>	T	
Bigeye jumprock	<i>Scartomyzon ariommus</i>	T	
Blotchside logperch	<i>Percina burtoni</i>	E	
Bluefin killifish	<i>Lucania goodei</i>	SC	
Blueside darter	<i>Etheostoma jessiae</i>	SC	
Bridle shiner	<i>Notropis bifrenatus</i>	SC	
Broadtail madtom	<i>Noturus sp</i>	SC	FSC
Cape Fear shiner	<i>Notropis mekistocholas</i>	E	E
Carolina darter	<i>Etheostoma collis</i>	SC	FSC
Carolina madtom	<i>Noturus furiosus</i>	SC	FSC
Carolina pygmy sunfish	<i>Elassoma boehlkei</i>	T	FSC
Cutlips minnow	<i>Exoglossum maxillingua</i>	E	
Dusky darter	<i>Percina sciera</i>	E	
Freshwater drum	<i>Aplodinotus grunniens</i>	T	
Highfin carpsucker	<i>Carpionodes velifer</i>	SC	
Kanawha minnow	<i>Phenacobius teretulus</i>	SC	FSC
Lake sturgeon	<i>Acipenser fulvescens</i>	SC	FSC
		State	Federal
Least brook lamprey	<i>Lampetra aepyptera</i>	T	
Least killifish	<i>Heterandria formosa</i>	SC	

Common Name	Scientific Name	State Status	Federal Status
Logperch	<i>Percina caprodes</i>	T	
Longhead darter	<i>Percina macrocephala</i>	SC	FSC
Mooneye	<i>Hiodon tergisus</i>	SC	
Mountain mad tom	<i>Noturus eleutherus</i>	SC	
Olive darter	<i>Percina squamata</i>	SC	FSC
Orange-fin madtom	<i>Noturus gilberti</i>	E	FSC
Paddlefish	<i>Polyodon spathula</i>	E	FSC
Pinewoods darter	<i>Etheostoma mariaae</i>	SC	FSC
River carpsucker	<i>Carpio des carpio</i>	SC	
Riverweed darter	<i>Etheostoma podostemone</i>	SC	
Rosyface chub	<i>Hybopsis rubrigrisoni</i>	T	
Rosyside dace [Little Tennessee River]	<i>Clinostomus funduloides</i> ssp	SC	FSC
Rustyside sucker	<i>Thoburnia hamiltoni</i>	E	FSC
Sandhills chub	<i>Semotilus lumbee</i>	SC	FSC
Sharphead darter	<i>Etheostoma acuticeps</i>	T	
Sharpnose darter	<i>Percina oxyrhynchus</i>	SC	
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E	E
Snubnose darter	<i>Etheostoma simoterum</i>	SC	
Spotfin chub	<i>Cyprinella monacha</i>	T	T
Stonecat	<i>Noturus flavus</i>	E	
Striped shiner	<i>Luxilus chrysocephalus</i>	T	
Thinlip chub	<i>Cyprinella</i> sp	SC	
Turquoise darter	<i>Etheostoma inscriptum</i>	SC	
Waccamaw darter	<i>Etheostoma perlongum</i>	T	FSC
Waccamaw killifish	<i>Fundulus waccamensis</i>	SC	FSC
Waccamaw silverside	<i>Menidia extensa</i>	T	T
Wounded darter	<i>Etheostoma vulneratum</i>	SC	FSC
Yellowfin shiner	<i>Notropis lutipinnis</i>	SC	
Mammals			
Appalachian woodrat	<i>Neotoma magister</i>	SC	FSC
Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	E	E
Eastern cougar	<i>Puma concolor couguar</i>	E	E
Eastern small-footed myotis (bat)	<i>Myotis leibii</i>	SC	FSC
Eastern woodrat [Coastal plain]	<i>Neotoma floridana floridana</i>	T	
Eastern woodrat [So Appalachian]	<i>Neotoma floridana haematoreia</i>	SC	FSC
Elk	<i>Cervus canadensis</i>	SC	
Fin whale	<i>Balaenoptera physalus</i>	- - -	E
Gray myotis (bat)	<i>Myotis grisescens</i>	E	E
Humpback whale	<i>Megaptera novaeangliae</i>	- - -	E
Indiana myotis (bat)	<i>Myotis sodalis</i>	E	E
Long-tailed shrew	<i>Sorex dispar</i>	SC	
Manatee	<i>Trichechus manatus</i>	E	E
Northern long-eared myotis (bat)	<i>Myotis septentrionalis</i>	SC	
Pungo white-footed mouse	<i>Peromyscus leucopus easti</i>	SC	
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>	T	FSC
Red wolf	<i>Canis rufus</i>	- - -	E/XN
Right whale	<i>Eubalaena australis</i>	- - -	E
Rock vole	<i>Microtus chrotorrhinus carolinensis</i>	SC	FSC
Southeastern myotis (bat)	<i>Myotis austroriparius</i>	SC	FSC
Southern water shrew	<i>Sorex palustris punctulatus</i>	SC	FSC
Sperm whale	<i>Physeter macrocephalus</i>	- - -	E
Star-nosed mole [Coastal plain]	<i>Condylura cristata</i> (pop)	SC	
Virginia big-eared bat	<i>Corynorhinus townsendii virginianus</i>	E	E
Mollusks			

Common Name	Scientific Name	State Status	Federal Status
Alewite floater	<i>Anodonta implicata</i>	T	
Appalachian elktoe	<i>Alasmidonta raveneliana</i>	E	E
Appalachian gloss	<i>Zonitoides patuloides</i>	SC	
Atlantic pigtoe	<i>Fusconaia masoni</i>	E	FSC
Barrel floater	<i>Anodonta couperiana</i>	E	
Bidentate dome	<i>Ventridens coelaxis</i>	SC	
Big-tooth covert	<i>Fumonelix jonesiana</i>	T	
Black mantleslug	<i>Pallifera hemphilli</i>	SC	
Blackwater ancylid	<i>Ferrissia hendersoni</i>	SC	
Blue-footed lancetooth	<i>Haplotrema kendeighi</i>	SC	
Brook floater	<i>Alasmidonta varicosa</i>	E	FSC
Cape Fear spike	<i>Elliptio marsupioles</i>	SC	
Cape Fear threetooth	<i>Triodopsis soelneri</i>	T	FSC
Carolina creekshell	<i>Villosa vaughaniana</i>	E	FSC
Carolina fatmucket	<i>Lampsilis radiata conspicua</i>	T	
Carolina heelsplitter	<i>Lasmigona decorata</i>	E	E
Clingman covert	<i>Fumonelix wheatleyi clingmanicus</i>	T	FSC
Creeper	<i>Strophitus undulatus</i>	T	
Dark glyph	<i>Glyphyalinia junaluska</i>	SC	
Dwarf proud globe	<i>Patera clarki</i>	SC	
Dwarf threetooth	<i>Triodopsis fulciden</i>	SC	
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	E	E
Eastern lampmussel	<i>Lampsilis radiata radiata</i>	T	
Eastern pondmussel	<i>Ligumia nasuta</i>	T	
Engraved covert	<i>Fumonelix orestes</i>	T	
Fragile glyph	<i>Glyphyalinia clingmani</i>	E	FSC
Fringed coil	<i>Helicodiscus fimbriatus</i>	SC	
Glossy supercoil	<i>Paravitrea placenta</i>	SC	
Great Smoky slitmouth	<i>Stenotrema depilatum</i>	SC	
Green floater	<i>Lasmigona subviridis</i>	E	FSC
Greenfield rams-horn	<i>Helisoma eucosmium</i>	E	FSC
High mountain supercoil	<i>Paravitrea andrewsae</i>	SC	
Honey glyph	<i>Glyphyalinia vanattai</i>	SC	
James spinymussel	<i>Pleurobema collina</i>	--	E
Knotty elimia	<i>Elimia interrupta</i>	E	
Lamellate super coil	<i>Paravitrea lamellidens</i>	SC	
Little-wing pearlymussel	<i>Pegias fabula</i>	E	E
Magnificent rams-horn	<i>Planorbella magnifica</i>	E	FSC
Mirey Ridge super coil	<i>Paravitrea clappi</i>	SC	
Mountain creekshell	<i>Villosa vanuxemensis</i>	T	
Noonday globe	<i>Patera clarki nantahala</i>	T	T
Notched rainbow	<i>Villosa constricta</i>	SC	
Open supercoil	<i>Paravitrea umbilicaris</i>	SC	
Pink glyph	<i>Glyphyalinia pentadelphina</i>	SC	
Pod lance	<i>Elliptio folliculata</i>	SC	
Purple wartyback	<i>Cyclonaias tuberculata</i>	E	
Queen crater	<i>Appalachina chilhoweensis</i>	SC	
Rainbow	<i>Villosa iris</i>	SC	
Ramp Cove supercoil	<i>Paravitrea lacteodens</i>	SC	
Roan supercoil	<i>Paravitrea varidens</i>	T	FSC
Roanoke slabshell	<i>Elliptio roanokensis</i>	T	
Savannah lilliput	<i>Toxolasma pullus</i>	E	FSC
Saw-tooth disc	<i>Discus bryanti</i>	SC	
Sculpted supercoil	<i>Paravitrea tern aria</i>	T	FSC

Common Name	Scientific Name	State Status	Federal Status
Seep mudalia	<i>Leptoxis dilatata</i>	T	
Slippershell mussel	<i>Alasmidonta viridis</i>	E	
Smoky Mountain covert	<i>Inflectarius ferrissi</i>	T	
Spike	<i>Elliptio dilatata</i>	SC	
Spiral coil	<i>Helicodiscus bonamicus</i>		
Tar river spinymussel	<i>Elliptio steinstansana</i>	E	E
Tennessee clubshell	<i>Pleurobema oviforme</i>	E	FSC
Tennessee heelsplitter	<i>Lasmigona holstonia</i>	E	FSC
Tennessee pigtoe	<i>Fusconaia barnesiana</i>	E	
Tidewater mucket	<i>Leptodea ochracea</i>	T	
Triangle floater	<i>Alasmidonta undulata</i>	T	
Velvet covert	<i>Inflectarius subpalliat</i>	SC	
Waccamaw ambersnail	<i>Catinella waccamawensis</i>	T	
Waccamaw snail	<i>Amnicola</i> sp	SC	
Waccamaw fatmucket	<i>Lampsilis fullerkati</i>	T	FSC
Waccamaw siltsnail	<i>Cincinnatia</i> sp	SC	
Waccamaw spike	<i>Elliptio waccamawensis</i>	E	FSC
Wavy-rayed lampmussel	<i>Lampsilis fasciola</i>	SC	
Yellow lampmussel	<i>Lampsilis cariosa</i>	E	FSC
Yellow lance	<i>Elliptio lanceolata</i>	E	FSC
<i>Reptiles</i>			
American alligator	<i>Alligator mississippiensis</i>	T	T (S/A)
Atlantic ridley turtle	<i>Lepidochelys kempi</i>	E	E
Bog turtle	<i>Clemmys (=Glyptemys) muhlenbergii</i>	T	T (S/A)
Carolina pigmy rattlesnake	<i>Sistrurus miliarius miliarius</i>	SC	
Carolina water snake	<i>Nerodia sipedon williamengelsi</i>	SC	
Diamondback terrapin	<i>Malaclemys terrapin</i>	SC	FSC
Eastern coral snake	<i>Micrurus fulvius</i>	E	
Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	E	
Eastern spiny softshell turtle	<i>Apalone spinifera spinifera</i>	SC	
Green turtle	<i>Chelonia mydas</i>	T	T
Hawksbill turtle	<i>Eretmochelys imbricata</i>	E	E
Leatherback turtle	<i>Dermochelys coriacea</i>	E	E
Loggerhead turtle	<i>Caretta caretta</i>	T	T
Mimic glass lizard	<i>Ophisaurus mimicus</i>	SC	FSC
Northern pine snake	<i>Pituophis melanoleucus melanoleucus</i>	SC	FSC
Outer banks kingsnake	<i>Lampropeltis getula sticticeps</i>	SC	
Smooth green snake	<i>Opheodrys (=Liochlorophis) vernalis</i>	SC	
Southern hognose snake	<i>Heterodon simus</i>	SC	FSC
Stripeneck musk turtle	<i>Sternotherus minor peltifer</i>	SC	
Timber rattlesnake	<i>Crotalus horridus</i>	SC	
<i>Others Listed</i>			
American burying beetle Saint	<i>Nicrophorus american us</i>		E
Francis' satyr (butterfly)	<i>Neonympha mitchellii francisci</i>		E
Spruce-fir moss spider	<i>Microhexura montivaga</i>		E

Appendix 5-2

Protected Plants

(Source: 2 NCAC 48F.0301 through .0304) [Added February 2000; Revised March 2008]

.0301 ENDANGERED PLANT SPECIES LIST

The North Carolina Plant Conservation Board hereby establishes the following list of endangered plant species:

(1) <i>Adiantum capillus-veneris</i> L.	Venus Hair Fern;
(2) <i>Aeschynomene virginica</i> (L.) B.S.P.	Sensitive Jointvetch;
(3) <i>Agrostis mertensii</i> Trin.	Arctic Bentgrass;
(4) <i>Amorpha georgiana</i> var. <i>georgiana</i> Wilbur	Georgia Indigo-bush;
(5) <i>Amphicarpum muehlenbergianum</i> (J.A. Schultes) A.S. Hitchc.	Florida Goober Grass, Blue Maidencane;
(6) <i>Arethusa bulbosa</i> L.	Bog Rose;
(7) <i>Asplenium heteroresiliens</i> W.H. Wagner	Carolina Spleenwort;
(8) <i>Asplenium monanthes</i> L.	Single-sorus Spleenwort;
(9) <i>Aster parviceps</i> (Burgess) Mackenzie & Bush	Glade Aster;
(10) <i>Bryocrumia andersonii</i> (Bartr.) Anders.	Gorge Moss;
(11) <i>Buckleya distichophylla</i> (Nuttall) Torrey	Piratebush;
(12) <i>Calamagrostis cainii</i> Hitchcock	Cain's Reed Grass;
(13) <i>Calopogon multiflorus</i> Lindl.	Many-flowered Grass-Pink;
(14) <i>Canoparmelia amabilis</i> Heiman & Elix	Worthy Shield Lichen;
(15) <i>Cardamine micranthera</i> Rollins	Small-anthered Bittercress;
(16) <i>Carex aenea</i> Fernald	Fernald's Hay Sedge;
(17) <i>Carex barrattii</i> Schweinitz and Torrey	Barratt's Sedge;
(18) <i>Carex lutea</i> LeBlond	Golden Sedge;
(19) <i>Carex oligosperma</i> Michx.	Few-seeded Sedge;
(20) <i>Carex radfordii</i> Gaddy	Radford's sedge;
(21) <i>Carex schweinitzii</i> Dewey ex Schweinitz	Schweinitz's Sedge;
(22) <i>Carya myristiciformis</i> (Michaux f.) Nuttall	Nutmeg hickory;
(23) <i>Cheilolejeunea evansii</i> (M.Taylor) Schust.	liverwort;
(24) <i>Chrysoma pauciflosculosa</i> (Michx.) Greene	Woody Goldenrod;
(25) <i>Conioselinum chinense</i> (L.) B.S.P.	Hemlock Parsley;
(26) <i>Cystopteris tennesseensis</i> Shaver	Tennessee Bladderfern;
(27) <i>Dalibarda repens</i> L.	Robin Runaway;
(28) <i>Delphinium exaltatum</i> Aiton	Tall Larkspur;
(29) <i>Dichanthelium caeruleum</i> (Hack. ex Hitchc.) Correll	Blue Witch Grass;
(30) <i>Echinacea laevigata</i> (Boydton and Beadle) Blake	Smooth Coneflower;
(31) <i>Eriocaulon lineare</i> Small	Linear Pipewort;
(32) <i>Eriocaulon texense</i> Koern	Texas Hatpins;
(33) <i>Filipendula rubra</i> (Hill) B.L. Robins.	Queen-of-the-Prairie;
(34) <i>Fimbristylis perpusilla</i> Harper ex Small & Britt.	Harper's Fimbry;
(35) <i>Fimbristylis perpusilla</i> Harper ex Small & Britton	Harper's Fringe-rush;
(36) <i>Gaylussacia nana</i> (Gray) Small	Confederate Huckleberry;
(37) <i>Gentianopsis crinita</i> (Froelich) Ma	Fringed Gentian;
(38) <i>Geum radiatum</i> Michaux	Spreading Avens;
(39) <i>Grammitis nimbata</i> (Jenm.)Proctor	Dwarf Polypody Fern;
(40) <i>Gymnocarpium appalachianum</i> Pryer & Haufler	Appalachian Oak Fern;
(41) <i>Helenium brevifolium</i> (Nutt.)Wood	Littleleaf Sneezeweed;
(42) <i>Helenium vernale</i> Walt.	Spring Sneezeweed;
(43) <i>Helianthemum nashii</i> Britt.	Florida Scrub frostweed;
(44) <i>Helianthus floridanus</i> Gray ex Chapman	Florida Sunflower;
(45) <i>Helianthus schweinitzii</i> T. & G.	Schweinitz's Sunflower;
(46) <i>Hexastylis contracta</i> Blomquist	Mountain Heartleaf;
(47) <i>Hierochloa odorata</i> (L.)Beauv.	Holy Grass;
(48) <i>Houstonia purpurea</i> var. <i>montana</i> (Small) Terrell	Mountain Bluet;

(49) <i>Hudsonia montana</i> Nutt.	Mountain Golden Heather;
(50) <i>Hydrastis canadensis</i> L.	Goldenseal;
(51) <i>Hymenophyllum tayloriae</i> Farrar & Raine	Gorge Filmy fern;
(52) <i>Isoetes microvela</i> D.F. Brunton	Quillwort;
(53) <i>Isotria medeoloides</i> (Pursh) Raf.	Small Whorled Pogonia;
(54) <i>Juncus caesariensis</i> Coville	Rough Rush;
(55) <i>Juncus trifidus</i> ssp. <i>carolinianus</i> Hamet Ahti	One-flowered Rush;
(56) <i>Lilium pyrophilum</i> M.W. Skinner & Sorrie	Sandhills bog lily;
(57) <i>Lindera melissaefolia</i> (Walter) Blume	Southern Spicebush;
(58) <i>Lipocarpha micrantha</i> (Vahl) G. Tucker	Small-flowered Hemicarpha;
(59) <i>Lophiola aurea</i> Ker-Gawl.	Golden Crest;
(60) <i>Lysimachia asperulaefolia</i> Poirlet	Rough-leaf Loosestrife;
(61) <i>Lysimachia fraseri</i> Duby	Fraser's Loosestrife;
(62) <i>Minuartia godfreyi</i> (Shinners) McNeill	Godfrey's Sandwort;
(63) <i>Minuartia uniflora</i> (Walter) Mattfield	Single-flowered Sandwort;
(64) <i>Muhlenbergia torreyana</i> (Schultes) Hitchcock	Torrey's Muhly;
(65) <i>Myrica gale</i> L.	Sweet Gale;
(66) <i>Narthecium americanum</i> Ker	Bog Asphodel;
(67) <i>Orbexilum macrophyllum</i> (Rowlee ex Small) Rydberg	Bigleaf Scurfpea;
(68) <i>Orthotrichum keeverae</i> Crum & Anders.	Keever's Bristle Moss;
(69) <i>Oxypolis canbyi</i> (Coult. & Rose) Fern.	Canby's Cowbane;
(70) <i>Panicum hirstii</i> Swallen	Hirst's Panic Grass;
(71) <i>Parnassia caroliniana</i> Michaux	Carolina Grass-of-Parnassus;
(72) <i>Paronychia herniariodes</i> (Michx.) Nutt.	Michaux's Whitlow-wort;
(73) <i>Pellaea wrightiana</i> Hooker	Wright's Cliff-brake Fern;
(74) <i>Plantago cordata</i> Lam.	Heart-leaf Plantain;
(75) <i>Plantago sparsiflora</i> Michaux	Pineland Plantain;
(76) <i>Platanthera integrilabia</i> (Correll) Leur	White Fringeless Orchid;
(77) <i>Poa paludigena</i> Fernald & Wiegand	Bog Bluegrass;
(78) <i>Pteroglossaspis ecristata</i> (Fernald) Rolfe	Eulophia;
(79) <i>Ptilimnium nodosum</i> (Rose) Mathias	Harperella;
(80) <i>Pyxidanthra barbulata</i> var. <i>brevifolia</i> (Wells) Ahles	Wells' Pyxie-moss;
(81) <i>Rhus michauxii</i> Sargent	Michaux's Sumac;
(82) <i>Rhynchospora crinipes</i> Gale	Mosquito Beak Sedge;
(83) <i>Rhynchospora macra</i> (C.B. Clarke) Small	Large Beak Sedge;
(84) <i>Rhynchospora odorata</i> C. Wright ex Griseb.	Fragrant Beaksedge;
(85) <i>Rhynchospora thornei</i> Kral	Thorne's Beaksedge;
(86) <i>Rudbeckia heliopsisidis</i> Torr. & Gray	Sun-facing Coneflower;
(87) <i>Sagittaria fasciculata</i> E.O. Beal	Bunched Arrowhead;
(88) <i>Sarracenia jonesii</i> Wherry	Mountain Sweet Pitcher Plant;
(89) <i>Sarracenia oreophila</i> (Kearney) Wherry	Green Pitcher Plant;
(90) <i>Schwalbea americana</i> L.	Chaffseed;
(91) <i>Scirpus flaccidifolius</i> (Fern.) Schuyler	Reclining Bulrush;
(92) <i>Sedum pusillum</i> Michaux	Puck's Orpine;
(93) <i>Sedum rosea</i> (L.) Scop.	Roseroot;
(94) <i>Senecio schweinitzianus</i> Nuttall	Schweinitz's Groundsel;
(95) <i>Shortia galacifolia</i> T. & G.	Oconee Bells;
(96) <i>Sisyrinchium dichotomum</i> Bicknell	Reflexed Blue-eyed Grass;
(97) <i>Solidago plumosa</i> Small	Yadkin River Goldenrod;
(98) <i>Solidago ptarmicoides</i> (Nees) Boivin	Prairie Goldenrod;
(99) <i>Solidago spithamea</i> M.A. Curtis	Blue Ridge Goldenrod;
(100) <i>Solidago villosicarpa</i> LeBlond	Coastal goldenrod;
(101) <i>Sphagnum fuscum</i> (Schimp.) Klinggr.	Brown Peatmoss;
(102) <i>Sphenobolopsis pearsoni</i> (Sprengel) Schuster & Kitagawa	liverwort;
(103) <i>Spigelia marilandica</i> (L.) L.	Pink Root;
(104) <i>Spiraea virginiana</i> Britton	Virginia Spiraea;

(105) <i>Sporobolus heterolepis</i> Gray	Prairie Dropseed;
(106) <i>Stylisma pickeringii</i> var. <i>pickeringii</i> (Torrey ex M.A. Curtis) Gray	Pickering's Morning Glory;
(107) <i>Talinum mengesii</i> W. Wolf	Large-flowered Fameflower;
(108) <i>Thalictrum cooleyi</i> Ahles	Cooley's Meadowrue;
(109) <i>Tortula ammoniana</i> Crum & Anders.	Ammon's Tortula;
(110) <i>Tridens ambiguus</i> (Ell.) J.A. Schultes	Pinelands Triodia;
(111) <i>Trillium pusillum</i> Michaux	Carolina Least Trillium;
(112) <i>Trisetum spicatum</i> var. <i>molle</i> (Michaux) Beal	Soft Trisetum;
(113) <i>Utricularia resupinata</i> B.D. Greene ex Bigelow	Northeastern Bladderwort;
(114) <i>Warea cuneifolia</i> (Muhl. ex Nutt.) Nutt.	Carolina Pineland-cress;
(115) <i>Zephyranthes simpsonii</i> Chapman	Rain Lily.

.0302 THREATENED PLANT SPECIES LIST

The North Carolina Plant Conservation Board hereby establishes the following list of threatened plant species:

1) <i>Amaranthus pumilus</i> Raf.	Seabeach Amaranth
(2) <i>Amorpha georgiana</i> var. <i>confusa</i> Wilbur	Savanna Indigo-bush
(3) <i>Aster georgianus</i> Alexander	Georgia Aster
(4) <i>Astragalus michauxii</i> (Kuntze) F.J. Herm.	Sandhills Milkvetch
(5) <i>Baptisia minor</i> Lehmann	Prairie Blue Indigo
(6) <i>Cacalia rugelii</i> (Shuttl. ex Chapm.) Barkley & Cronq.	Rugel's Ragwort
(7) <i>Camassia scilloides</i> (Raf.) Cory	Wild Hyacinth
(8) <i>Carex conoidea</i> Willd.	Cone-shaped Sedge
(9) <i>Carex exilis</i> Dewey	Coastal Sedge
(10) <i>Eleocharis halophila</i> Fern. & Brack.	Salt Spikerush
(11) <i>Eupatorium resinosum</i> Torr. ex DC.	Resinous Boneset
(12) <i>Geum geniculatum</i> Michaux	Bent Avens
(13) <i>Glyceria nubigena</i> W.A. Anderson	Smoky Mountain Mannagrass
(14) <i>Gymnoderma lineare</i> (Evans) Yoshimura & Sharp	Gnome Finger Lichen
(15) <i>Helonias bullata</i> L.	Swamp Pink
(16) <i>Hexastylis naniflora</i> Blomquist	Dwarf-flowered Heartleaf
(17) <i>Hexastylis rhombiformis</i> Gaddy	French Broad Heartleaf
(18) <i>Ilex collina</i> Alexander	Long-stalked Holly
(19) <i>Isoetes piedmontana</i> (Pfeiffer) Reed	Piedmont Quillwort
(20) <i>Liatris helleri</i> (Porter) Porter	Heller's Blazing Star
(21) <i>Lilaeopsis carolinensis</i> Coult. & Rose	Carolina Lilaeopsis
(22) <i>Lilium grayi</i> Watson	Gray's Lily
(23) <i>Lindera subcoriacea</i> Wofford	Bog spicebush
(24) <i>Lobelia boykinii</i> T. & G.	Boykin's lobelia
(25) <i>Macbridea caroliniana</i> (Walt.) Blake	Carolina Bogmint
(26) <i>Menyanthes trifoliata</i> L.	Buckbean
(27) <i>Myriophyllum laxum</i> Schuttlew. ex Chapman	Loose Watermilfoil
(28) <i>Parnassia grandifolia</i> DC.	Large-leaved Grass-of-Parnassus
(29) <i>Platanthera integra</i> (Nuttall) Gray ex Beck	Yellow Fringeless Orchid
(30) <i>Platanthera nivea</i> (Nutt.) Luer	Snowy Orchid
(31) <i>Portulaca smallii</i> P. Wilson	Small's Portulaca
(32) <i>Quercus ilicifolia</i> Wangenheim	Bear oak
(33) <i>Rhexia aristosa</i> Britton	Awned Meadow-beauty
(34) <i>Rhynchospora pleiantha</i> (Kukenth.) Gale	Coastal Beaksedge
(35) <i>Ruellia humilis</i> Nutt.	Low Wild-petunia
(36) <i>Sabatia kennedyana</i> Fern.	Plymouth Gentian
(37) <i>Sarracenia minor</i> Walt.	Hooded Pitcher Plant
(38) <i>Schisandra glabra</i> (Brickel) Rehder	Magnolia-vine
(39) <i>Schlotheimia lancifolia</i> Bartr.	Highlands Moss

(40) <i>Senecio millefolium</i> T. & G.	Divided-leaf Ragwort
(41) <i>Solidago verna</i> M.A. Curtis	Spring-flowering Goldenrod
(42) <i>Spiranthes longilabris</i> Lindl.	Giant Spiral Orchid
(43) <i>Sporobolus teretifolius</i> Harper	Wireleaf Dropseed
(44) <i>Thelypteris simulata</i> (Davenp.) Nieuwl.	Bog Fern
(45) <i>Trichomanes boschianum</i> Sturm ex Bosch	Appalachian Filmy-fern
(46) <i>Trichomanes petersii</i> A. Gray	Dwarf Filmy-fern
(47) <i>Trillium discolor</i> Wray ex Hook.	Mottled Trillium
(48) <i>Utricularia olivacea</i> Wright ex Grisebach	Dwarf Bladderwort.

.0304 PLANT SPECIES OF SPECIAL CONCERN

Special Concern Endangered Plant Species are those species that appear on both the Endangered Species List and on the Special Concern Species List and which can be offered for propagation to qualified propagators under permit.

(1) <i>Cystopteris tennesseensis</i>	Shaver Tennessee Bladderfern
(2) <i>Delphinium exaltatum</i>	Aiton Tall Larkspur
(3) <i>Echinacea laevigata</i>	(Boynton & Beadle) Blake Smooth Coneflower
(4) <i>Gentianopsis crinita</i>	(Froehlich) Ma Fringed Gentian
(5) <i>Geum radiatum</i>	Michaux Spreading Avens
(6) <i>Hydrastis canadensis</i>	L. Goldenseal, Orangeroot
(7) <i>Kalmia cuneata</i>	Michaux White Wicky
(8) <i>Lilium pyrophilum</i>	Skinner & Sorrie Sandhills bog lily
(9) <i>Pellaea wrightiana</i>	Hooker Wright's Cliff - brake Fern
(10) <i>Rhus michauxii</i>	Sargent Michaux's Sumac
(11) <i>Sarracenia jonesii</i>	Wherry Mountain Sweet Pitcher Plant
(12) <i>Sarracenia oreophila</i>	(Kearney) Wherry Green Pitcher Plant
(13) <i>Shortia galacifolia</i>	T. & G. Oconee Bells

(b) Special Concern Threatened Plant Species are those species that appear on both the Threatened Species List and on the Special Concern Species List and which can be offered for propagation to qualified propagators under permit.

- (1) *Eupatorium resinosum* -- Torr. ex DC. Resinous Boneset;
- (2) *Helonias bullata* -- L. Swamp Pink;
- (3) *Liatris helleri* -- (Porter) Porter Heller's Blazing Star;
- (4) *Lilium grayi* -- Watson Gray's Lily;
- (5) *Sabatia kennedyana* -- Fern. Plymouth Gentian;
- (6) *Schisandra glabra* -- (Brickel) Rehder Magnolia Vine.

(c) Special Concern Not Endangered or Threatened Plant Species are those species that appear on the Special Concern Species List but do not appear on the Endangered Species List or the Threatened Species List and which it shall be unlawful to distribute, sell or offer for sale except as otherwise provided in the rules.

- (1) *Dionaea muscipula* -- Ellis Venus Flytrap;
- (2) *Panax quinquefolius* -- L. Ginseng.

SECTION 6

OTHER ENVIRONMENTAL ISSUES

North Carolina Supplement, March 2010

This section covers the state requirements for Other Environmental Issues and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Regulations Incorporated by Reference

40 CFR 265.1200 through 265.1202 (Subpart EE), "Hazardous Waste Munitions and Explosives Storage", are incorporated by reference including subsequent amendments and editions (15A NCAC 13A.0110) [Added March 2006].

Definitions

- *Department* - Department of Environment and Natural Resources (DENR). (Title 15A, North Carolina Administrative Code, Subchapter 13A, Section .0102 (15A NCAC 13A.0102)) [Added March 1998; Revised March 2007].
- *Registered Environmental Consultant (REC)* - an environmental consulting or engineering firm approved to implement and oversee voluntary remedial actions pursuant to NCGS 130A-310.9(c) (15A NCAC 13C.0301) [Added March 1998; Citation Revised March 2007].
- *Voluntary Remedial Action* - a remedial action as defined in NCGS 130A-310(7) conducted voluntarily by an owner, operator, or responsible party and undertaken with the approval of the Department pursuant to NCGS 130A-310.9(c) (15A NCAC 13C.0301) [Added March 1998; Citation Revised March 2007].

**OTHER ENVIRONMENTAL ISSUES
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

The NEPA Process

Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

All Federal Facilities O1.1.1.NC.

Missing Checklist Items O1.2.1.NC.

Environmental Noise

Missing Checklist Items O2.2.1.NC.

State-Specific Requirements O2.5.1.NC. and O2.5.2.NC.

CERCLA Cleanup Sites

Missing Checklist Items O3.2.1.NC.

State-Specific Requirements O3.20.1.NC. and O3.20.2.NC.

Pollution Prevention

Refer to the U.S. TEAM Guide and the DOD Component Supplements for DOD and service-specific requirements.

Missing Checklist Items O4.2.1.NC.

Program Management

Refer to the U.S. TEAM Guide and the DOD Component Supplements for DOD and service-specific requirements.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>THE NEPA PROCESS</p> <p>01.1. All Facilities</p> <p>01.1.1.NC. Certain hurricane relief and recovery activities require environmental documents to be filed (15A NCAC 1C.0412) [Added March 2006].</p>	<p>(NOTE: Activities undertaken in response to the "Hurricane Recovery Act of 2005" and funded with public monies from the Disaster Relief Reserve Fund do not require the filing of environmental documents except as defined in this checklist item.)</p> <p>Verify that the following hurricane relief and recovery activities require the filing of environmental documents under NCEPA:</p> <ul style="list-style-type: none"> - construction or reconstruction of a building in the 100-year floodplain unless the building is raised above the 100-year flood elevation as recommended by FEMA - expansion of a wastewater treatment plant or potable water system in excess of the capacity that existed on September 1, 2004 unless the expansion would be covered by minimum criteria set out in Rule. 0409 of this Section - groundwater withdrawals in excess of those described in Rule .0409 of this Section - land disturbing activity that affects more than 5 acres located within a High Quality Water or Outstanding Resource Water zone - reforestation of woodlands unless the reforestation is done in accordance with a National Forest Service or North Carolina Division of Forest Resources woodlands management plan - the Secretary requires that an environmental document be prepared for any hurricane relief and recovery activity that is of such an unusual nature or has such widespread implications that a concern for its environmental effects has been identified by DENR.

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
THE NEPA PROCESS O1.2. Missing Checklist Items O1.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
ENVIRONMENTAL NOISE O2.2. Missing Checklist Items O2.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>CERCLA CLEANUP SITES</p> <p>03.2. Missing Checklist Items</p> <p>03.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
CERCLA CLEANUP SITES O3.20. State-Specific Requirements O3.20.1.NC. All inactive hazardous substance or waste disposal sites must be reported and proposed remedial action plans developed (15A NCAC 13C.0101 and 13C.0102).	<p>Verify that relevant site data for each inactive hazardous substance or waste disposal site is reported to the Division.</p> <p>Verify that relevant site data includes the following:</p> <ul style="list-style-type: none"> - site name and location - type of operation - length of operation - environmental permits - known or suspected releases of hazardous substances or wastes - characteristics of hazardous substances or wastes used or deposited onsite - hazardous substance or waste disposal and storage methods - hazardous substance or waste quantities - accessibility of the site to public access - remedial actions which have been previously undertaken or are currently being undertaken - monitoring data - other relevant data. <p>Verify that notification is submitted not later than 90 days after discovery of the landfill.</p> <p>Verify that a public notice and summary for proposed remedial action plan is made, including the following information:</p> <ul style="list-style-type: none"> - name and address of the Division - brief statement explaining that the Division is responsible for reviewing and approving the remedial action plan - name, address, and phone number of a contact person in the Division from whom interested parties may obtain additional information regarding the plan - brief description of the site location and problems which resulted in it requiring remedial action - brief description of corrective action proposed and other alternatives considered in developing the remedial action plan - references to applicable statutory or regulatory authority - brief description of any agreements reached by responsible parties to implement the remedial action plan - location of copies of the proposed plan available for public inspection. <p>(NOTE: The Division rates each hazardous waste or substance disposal site based on the potential for groundwater migration, surface water migration, air migration,</p>

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>O3.20.2.NC. Facilities undertaking voluntary remedial actions must meet specific requirements (15A NCAC 13C.0302 and 13C.0308) [Added March 1998].</p>	<p>and direct contact to determine its place in relation to other sites requiring cleanup.)</p> <p>(NOTE: North Carolina has statutory and regulatory provisions concerning voluntary remediation actions. These provisions are contained in NCGS 130A-310.9 and 15A NCAC 13C.0301 through .0308.)</p> <p>Verify that, if voluntary remedial action is undertaken, a written agreement is entered into with the Department.</p> <p>Verify that voluntary remedial actions are overseen by a Registered Environmental Consultant (REC).</p> <p>Verify that RECs ensure that the Department's ascertainment of the most nearly applicable cleanup standards as would be applied under CERCLA/SARA are met.</p> <p>(NOTE: Characterization of risks to health, safety, public welfare, and the environment is not required under NCAC Subchapter 13C, Section .0300 for a disposal site, environmental medium, or chemical for which response actions have successfully reduced concentrations of hazardous substances to on-site natural background levels.)</p>

COMPLIANCE CATEGORY: OTHER ENVIRONMENTAL ISSUES North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
POLLUTION PREVENTION O4.2. Missing Checklist Items O4.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

SECTION 7

PESTICIDE MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Pesticide Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Regulations Adopted by Reference

The following regulations from Title 40 Code of Federal Regulations (40 CFR) have been incorporated by reference by North Carolina:

- 40 CFR Part 166, "Exemption of Federal and State Agencies for Use of Pesticides in Emergencies."
- 40 CFR Part 170, "Worker Protection Standard" (including subsequent amendments)
- 40 CFR Part 165, "Pesticide Management and Disposal Subpart E -- Standards for Pesticide Containment Structures".

Definitions

- *Adverse Effect* - personal injury, damage to personal property, damage to real property, damage to the environment, or any combination of these (North Carolina Administrative Code, Title 2, Chapter 9, Subchapter 9L, Section .1401 (2 NCAC 9L.1401)).
- *Agricultural Pest Control* - both of the following (2 NCAC 9L.0504):
 1. plant--includes pesticide applicators using or supervising the use of pesticides in production of agricultural crops, including without limiting the foregoing, tobacco, peanuts, cotton, feed grains, soybeans and forage; vegetables; small fruits; tree fruits and nuts; as well as on grasslands and noncrop agricultural lands
 2. animal--includes pesticide applicators using or supervising the use of pesticides on animals, including without limiting the foregoing, beef cattle, dairy cattle, swine, sheep, horses, goats, poultry, and livestock, and to places on or in which animals are confined. Doctors of veterinary medicine engaged in the business of applying pesticides for hire, publicly holding themselves out as pesticide applicators or engaged in large-scale use of pesticides are included in this category.
- *Antisiphon Device* - any equipment that prevents the backflow of a pesticide into any water supply or the backflow of water into a pesticide supply. Antisiphon devices include automatic low pressure drain, check valve, flow interrupter, and vacuum relief valve (2 NCAC 9L.2001).
- *Automatic Low Pressure Drain* - a self-activating device to drain that portion of an irrigation pipeline whose contents could potentially enter the water supply when operation of the irrigation system pumping plant fails or is shut down (2 NCAC 9L.2001).
- *Bulk Storage* -commercial storage of any pesticide held in stationary pesticide containers designed to hold undivided quantities equal to or greater than 500 gallons (1,890 liters) of liquid pesticide or equal to or greater than 4,000 pounds (1,818 kilograms) of dry pesticide are subject to the regulations in this Rule unless any of the following conditions exists: (2 NCAC 9L.1901) [Added March 2010]
 - a. the container is empty, that is, all pesticide that can be removed by the methods such as draining, pumping, or aspirating has been removed (whether or not the container has been rinsed or washed)
 - b. the container holds only pesticide rinsates or wash waters, and is labeled accordingly

- c. the container holds only pesticides which would be gaseous when released at atmospheric temperature and pressure
 - d. the container is dedicated to non-pesticide use, and is labeled accordingly
- *Check Valve* - a device to provide a positive closure of an irrigation pipeline or pesticide injection line that effectively prohibits the flow of pesticide or water in the opposite direction of that desired when operation of the irrigation system pumping plant or pesticide injection unit fails or is shut down (2 NCAC 9L.2001).
 - *Chemigation* - any process whereby pesticides are applied to land, crops, and/or plants utilizing an irrigation system. Some examples are agricultural, nursery, turf, lawn, golf course, and greenhouse sites (2 NCAC 9L.2001).
 - *Chemigation and/or Irrigation Water Supplies* - any source of water that is used for chemigation and/or irrigation to include private wells, public water systems, ground or surface water sources (2 NCAC 9L.2001).
 - *Commercial Structure* - any structure which is not a residential structure; including but not limited to shopping centers, offices, nursing homes and similar structures (2 NCAC 34.0102) [Added March 1998].
 - *Community Water System* - a public water system which serves at least 15 service connections or regularly serves at least 25 year-round residents (2 NCAC 9L.2001).
 - *Container* - any package, can, bottle, bag, barrel, drum, tank, or other containing device (excluding spray applicator tanks) used to enclose a pesticide or pesticide-related wastes (2 NCAC 9L.0601).
 - *Contingency Plan* - a description of a facility's plans and capabilities to deal with a pesticide emergency resulting from operational procedures, accidental releases, fires, or other emergencies. A contingency plan will be deemed adequate by the North Carolina Pesticide Board if in the opinion of the Board such plan presents reasonable assurances that the facility will be able to contain or otherwise prevent the release of pesticides, to minimize unreasonable adverse effects on public health or the environment (2 NCAC 9L.1901) [Added March 1998].
 - *Department* - the Department of Agriculture and Consumer Services of the State of North Carolina (2 NCAC 34.0102) [Added March 1998].
 - *Division* - the Structural Pest Control Division of the Department of Agriculture and Consumer Services of the State of North Carolina (2 NCAC 34.0102) [Added March 1998].
 - *Drift* - the airborne movement of pesticides resulting from the application of pesticides such as to carry the pesticides beyond the target area (2 NCAC 9L.1401).
 - *Enclosed Space* - any structure by whatever name known, including household structures, commercial buildings, warehouses, docks, vacant structures, and places where people congregate, such as hospitals, schools, churches, and others; railroad cars, trucks, ships, aircraft, and common carriers. It also means vaults, tanks, chambers, and special rooms designed for use, being used, or intended to be used for fumigation operations (2 NCAC 34.0102) [Added March 1998].
 - *Environment* - water, air, land, and all plants and man and other animals living therein and the interrelationships which exist among these (2 NCAC 9L.1401).
 - *Excess Pesticides* - all pesticides which cannot be legally sold or which are to be discarded (2 NCAC 9L.0601).
 - *Flow Interrupter* - a device that provides positive interruption or cessation of pesticide or water flow in either direction upon pesticide injection unit shutdown or failure (2 NCAC 9L.2001).

- *Fog or Fogging* - micron sized particles of pesticide(s) dispersed by means of a thermal or centrifugal fogger or a pressurized aerosol pesticide (2 NCAC 34.0102) [Added March 2005].
- *Fumigation* - the use of fumigants within an enclosed space, or in, or under a structure, in concentrations which may be hazardous to man (2 NCAC 34.0102) [Added March 1998].
- *Fumigation Crew or Crew* - personnel performing the fumigation operation (2 NCAC 34.0102) [Added March 1998].
- *Fumigation Operation* - all details prior to application of fumigant(s), the application of fumigant(s), fumigation period, and post fumigation details as outlined in these Rules (2 NCAC 34.0102) [Added March 1998].
- *Fumigation Period* - the period of time from application of fumigant(s) until ventilation of the fumigated structure(s) is completed, and the structure or structures are declared safe for occupancy for human beings or domestic animals (2 NCAC 34.0102) [Added March 1998].
- *Fumigator* - a person licensed under the provisions of NCGS 106-65.25(a) (3) or certified under the provisions of NCGS 106-65.25(e) (1) to engage in or supervise fumigation operations (2 NCAC 34.0102) [Added March 1998].
- *Functional Systems Interlock* - a system used to link irrigation pumps and pesticide injection units, other pumps or supply tanks so designed that in the event of irrigation pump malfunction or failure, shutdown of the pesticide injection units will occur (2 NCAC 9L.2001).
- *Gas-Retaining Cover* - a cover which will confine fumigant(s) to the space(s) intended to be fumigated (2 NCAC 34.0102) [Added March 1998].
- *General Fumigation* - the application of fumigant(s) to one or more rooms and their contents in a structure, at the desired concentration and for the necessary length of time to control rodents, insects, or other pests (2 NCAC 34.0102) [Added March 1998].
- *Household* - any structure and its contents which are used for man (2 NCAC 34.0102) [Added March 1998].
- *Household Pest* - any vertebrate or invertebrate organism occurring in a structure or the surrounding areas thereof, including but not limited to insects and other arthropods, commensal rodents, and birds which have been declared pests under G.S. 143-444. "Household pest" does not include wood destroying organisms (2 NCAC 34.0102) [Added March 2003].
- *Household Pest Control* - that phase of structural pest control other than the control of wood-destroying organisms and fumigation and shall include the application of remedial measures for the purpose of curbing, reducing, preventing, controlling, eradicating, and repelling household pests (2 NCAC 34.0102) [Added March 1998].
- *Inspection Port* - a place on the irrigation pipeline that can be utilized to determine visually if the check valve leaks (2 NCAC 9L.2001).
- *Irrigation* - the act of mechanically supplying water to land, crops, and/or plants (2 NCAC 9L.2001).
- *Irrigation System* - any device or combination of devices having hose, pipe, or other conduit which connects directly to any water supply. The term does not include any handheld hose-end sprayer which is constructed so that an interruption in water flow automatically prevents any backflow to the water supply (2 NCAC 9L.2001).
- *Large Storage Facility* - any storage facility that stores 10,000 lbs or more of restricted use pesticides at any time (2 NCAC 9L.1901) [Added March 1998].

- *Licensed Structural Pest Control Operation, or Pest Control Operation, or Operator, or Licensed Operator* - any person licensed under the provisions of G.S. 106-65.25(a) or unlicensed who, for direct or indirect hire or compensation is engaged in the business of structural pest control work, as defined in G.S. 106-65.24(23) (2 NCAC 34.0102) [Added March 2003].
- *Non-Commercial Certified Applicator* - any certified applicator not employed by a licensed individual (2 NCAC 34.0102) [Added March 1998].
- *Noncommunity Water System* - a public water system which is not a community water system (2 NCAC 9L.2001).
- *Open Porch* - any porch without fill in which the distance from the bottom of the slab to the top of the soil beneath the slab is greater than 12 inches (2 NCAC 34.0102) [Added March 1998].
- *Pesticide-Related Wastes* - all pesticide-containing wastes or byproducts which are produced in the manufacturing or processing of a pesticide and which are to be discarded, but which, pursuant to acceptable pesticide manufacturing or processing operations, are not ordinarily a part of or contained within an industrial waste stream discharged into a sewer or the waters of the state (2 NCAC 9L.0601).
- *Physical Barrier* - used in 02 NCAC 34 .0500, means a barrier, which, by its physical properties and proper installation, is capable of preventing the passage of subterranean termites into a structure to be protected from subterranean termites (2 NCAC 34.0102) [Added March 2003].
- *Public Water System* - includes both (2 NCAC 9L.2001):
 1. a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Such term includes:
 - a. any collection, treatment, storage, and distribution facility under control of the operator of such system and used primarily in connection with such system
 - b. any collection or pre-treatment storage facility not under such control which is used primarily in connection with such system
 2. it is either a “community water system” or a “noncommunity water system”:
 - a. community water system - a public water system which serves at least 15 service connections or regularly serves at least 25 year-round residents
 - b. noncommunity water system - a public water system which is not a community water system.
- *Residential Structure* - any structure used as a permanent dwelling such as a single- or multi-family home, a condominium or townhouse or an apartment (2 NCAC 34.0102) [Added March 1998].
- *Restricted Use Pesticide* - all of the following (2 NCAC 9L.0502):
 1. any pesticide required by the USEPA to bear the designation on its labeling RESTRICTED USE PESTICIDE
 2. arsenic trioxide, all formulations of which must be sold and/or purchased in accordance with additional regulations (2 NCAC 9L.1200) adopted by the North Carolina Pesticide Board
 3. any pesticide approved under 2 NCAC 9L.0318.
- *Safe Disposal* - discarding pesticides or containers in a permanent manner so as to comply with these procedures and so as to avoid unreasonable adverse effects on the environment (2 NCAC 9L.0601).
- *Service Vehicle* - any vehicle used regularly to transport the licensee or certified applicator or registered technician or other employee or any equipment or pesticides used in providing structural pest control services (2 NCAC 34.0102) [Added March 2005].
- *Slab-On-Ground* - a concrete slab in which all or part of that concrete slab is resting on or is in direct contact with the ground immediately beneath the slab (2 NCAC 34.0102) [Added March 1998].

- *Space Spray* - any pesticide, regardless of its particle size, which is applied to the atmosphere within an enclosed space in such a manner that dispersal of the pesticide particles is uncontrolled. Pesticidal fogs or aerosols, including those produced by centrifugal or thermal fogging equipment or pressurized aerosol pesticides, shall be considered space sprays (2 NCAC 34.0102) [Added March 2005].
- *Spot Fumigation* - the application of a fumigant to a localized space or harborage within, on, under, outside of, or adjacent to, a structure for local household pest or rodent control (2 NCAC 34.0102) [Added March 1998].
- *Spot Surface Residual Spray* - the application of pesticidal spray directly to a surface and only in specific areas where necessary and in such a manner that the pesticidal material will largely adhere to the surface where applied and will remain toxic to household pests or rodents or other pests for which applied for an extended period of time (2 NCAC 34.0102) [Added March 2005].
- *Storage* - the act of storing a pesticide or pesticide container unless the pesticide or pesticide container is being transported or used. It does not include (2 NCAC 9L.1901):
 1. pesticide containers which are empty and triple-rinsed (or equivalent)
 2. pesticides which meet the requirements of a Resource Conservation and Recovery Act (RCRA) hazardous waste (40 Code of Federal Regulations (CFR) 261.33) and are in the possession of a person possessing a valid USEPA RCRA identification number as a generator (40 CFR 261.12) or transporter (40 CFR 263.11) of hazardous waste or who owns or operates a facility for the treatment, storage, or disposal of hazardous waste (40 CFR 264.11).
- *Storage Area* - that portion of a storage facility actually used to store pesticides (2 NCAC 9L.1901) [Added March 1998].
- *Storage Facility* - any property or contiguous properties under the same ownership used for commercial storage of pesticides. Multiple storage areas in or on single or contiguous properties under the same ownership are considered to be in the same storage facility (2 NCAC 9L.1901) [Added March 1998].
- *Structure* - all parts of a building, whether vacant or occupied, in all stages of construction (2 NCAC 34.0102) [Added March 1998].
- *Structural Pests* - all pests that occur in any type of structure of man and all pests associated with the immediate environs of such structures (2 NCAC 34.0102) [Added March 1998].
- *Sub-Slab Fumigation* - the application of a fumigant below or underneath a concrete slab and is considered spot fumigation (2 NCAC 34.0102) [Added March 1998].
- *Termiticide(s)* - (as used in 2 NCAC 34.0503, Subterranean Termite Control, and 2 NCAC 34.0505, Subterranean Termite Prevention) those pesticides specified in 2 NCAC 34.0502, Pesticides for Subterranean Termite Prevention and/or Control (2 NCAC 34.0102) [Added March 1998].
- *To Use Any Pesticide in a Manner Inconsistent with its Labeling* - to use any pesticide in a manner not permitted by the labeling. Provided that, the term shall not include: (2 NCAC 34.0102) [Added March 1998]:
 1. applying a pesticide at any dosage, concentration or frequency less than that specified on the labeling;
 2. applying a pesticide against any target pest not specified on the labeling if the application is to the site specified on the labeling, unless the EPA has required that the labeling specifically state that the pesticide may be used only for the pests specified on the labeling;
 3. employing any method of application not prohibited by the labeling.
- *Vacuum Relief Valve* - a device to automatically relieve or break vacuum in an irrigation pipeline (2 NCAC 9L.2001.)

- *Wood-Destroying Organism* - an organism such as a termite, beetle, other insect, or fungus which may invade, inhabit, devour, or destroy wood or wood products and other cellulose material found in, on, under, in contact with, and around structures (2 NCAC 34.0102) [Added March 1998].

**PESTICIDE MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	PM.2.1.NC.
State and Local Requirements	PM.3.1.NC.
Pesticide Applicator	PM.5.1.NC. and PM.5.2.NC.
State Restricted-Use Pesticides	PM.6.1.NC.
Pesticide Application	
General	PM.10.1.NC. and PM.10.2.NC.
Agriculture	PM.20.1.NC. and PM.20.2.NC.
Aerial	PM.25.1.NC. through PM.25.7.NC.
Other	PM.35.1.NC. through PM.35.30.NC.
Documentation	PM.40.1.NC.
Storage/ Mixing/ Handling	PM.45.1.NC. through PM.45.4.NC.
Disposal	PM.55.1.NC.
Bulk Pesticides	PM.60.1.NC.

GUIDANCE FOR APPENDIX USERS

REFER TO APPENDIX NUMBERS:

REFER TO APPENDIX TITLES:

7-1

Subterranean Termite Control for Building After Construction

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.2.</p> <p>MISSING CHECKLIST ITEMS</p> <p>PM.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.3.</p> <p>STATE AND LOCAL REQUIREMENTS</p> <p>PM.3.1.NC. The use of pesticides to control gulls must comply with a specific permit (2 NCAC 9L.0703 and 9L.0704) [Added March 1998].</p>	<p>(NOTE: The North Carolina Pesticide Board has declared as a pest gulls (members of the genus <i>Larus</i>) on or near airport runways when they occur in such manner as to endanger air traffic.)</p> <p>Verify that the use of pesticides against gulls at airports complies with a specific permit issued by the North Carolina Pesticide Board for specified airports and for the use of specified pesticides.</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.5.</p> <p>PESTICIDE APPLICATORS</p> <p>PM.5.1.NC. Pesticide applicators must be licensed (2 NCAC 9L.0503).</p> <p>PM.5.2.NC. Restricted use pesticide must not be made available for use to any person other than a certified applicator (2 NCAC 9L.1302 and 9L.1303) [Revised March 2002; Revised March 2003].</p>	<p>Verify that at least one person at each business location, responsible for the application of pesticides for routine pest control situations, is licensed.</p> <p>Verify that the person licensed as the pesticide applicator, if not directly involved in use of pesticides, supervises and guides the activities of all personnel applying pesticides.</p> <p>Verify that restricted use pesticides are not made available for use to any person other than a certified private applicator, licensed pesticide applicator, certified structural pest control applicator, or structural pest control licensee.</p> <p>(NOTE: An exemption to this requirement applies to an employer who makes restricted use pesticides available to an employee under the supervision of a certified private or licensed pesticide applicator, certified structural pest control applicator, or structural pest control licensee provided the employee is acting under the direction and supervision of these applicators and is 16 yrs of age or older. If an employer provides restricted use pesticides to an employee under this exemption, a record of the certification number of the employer under whose direction and supervision the employee is acting, signed by the employee, must be kept. This information must be available for routine inspection by the North Carolina Pesticide Board or its agent.)</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.6.</p> <p>STATE RESTRICTED PESTICIDES</p> <p>PM.6.1.NC. The use of arsenic trioxide must meet specific requirements (2 NCAC 9L.1201 and 9L.1202) [Revised March 1998].</p>	<p>(NOTE: This checklist item was moved from PM.10.2.NC., February 1999.)</p> <p>Verify that pesticide formulations containing the active ingredient arsenic trioxide are not used or stored inside or in the immediate vicinity of any building used as a human dwelling.</p> <p>Verify that the use of such formulations containing arsenic trioxide is performed in a manner consistent with the product labeling and access to the pesticide by children is limited.</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
PESTICIDE APPLICATION PM.10. General PM.10.1.NC. Pesticides must be applied in such a way as to avoid drift (2 NCAC 9L.1404) [Revised March 1998]. PM.10.2.NC. [Moved February 1999].	<p>Verify that pesticides are not applied under conditions that result in adverse effects from the drift of pesticide particles or vapors.</p> <p>(NOTE: This checklist item moved to PM.6.1.NC.)</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PESTICIDE APPLICATION</p> <p>PM.20. Agriculture</p> <p>PM.20.1.NC. The application of pesticides using chemigation must meet specific design requirements (2 NCAC 9L.2002 and 9L.2003) [Revised March 1998].</p>	<p>Verify that the irrigation systems used for chemigation are fitted with effective antisiphon devices and a functional systems interlock that will prevent the following during times of irrigation system failure or equipment shutdown:</p> <ul style="list-style-type: none"> - backflow of pesticide or pesticide-water mixtures into water supplies - backflow of water or pesticide-water mixtures into pesticide supplies. <p>Verify that, if a public water system is used as the water source, the chemigation system meets all of the following criteria:</p> <ul style="list-style-type: none"> - an irrigation system used for pesticide application system is not connected directly to the public water system - the water from the public water system is discharged into a reservoir tank - there is a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. <p>Verify that pesticides are not injected into an irrigation system on the suction side of the irrigation pump.</p> <p>Verify that safety devices or valves are installed between both of the following:</p> <ul style="list-style-type: none"> - the irrigation system pump discharge and the point of pesticide injection into the irrigation system - the point of pesticide injection into the irrigation system and the pesticide tank or container. <p>Verify that the chemigation system has double check valves located between the irrigation pump discharge and the point of pesticide injection into the irrigation pipeline.</p> <p>Verify that these valves, when installed, are on a horizontal plane and level with a deviation of not more than 10 degrees from the horizontal.</p> <p>Verify that an inspection port is located between the irrigation pump discharge and the mainline check valves</p> <p>Verify that a vacuum relief valve is located on the top of the horizontal irrigation pipeline between the discharge side of the irrigation pump and the inlet side of the double check valves.</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.20.2.NC. A chemigation system must meet specific inspection, installation, and maintenance requirements (2 NCAC 9L.2004).</p>	<p>Verify that the vacuum relief valve has an orifice size of at least 3/4 in. for a 4-in. diameter irrigation pipe and increases proportionally to an increase in irrigation pipe diameter</p> <p>Verify that an automatic low pressure drain is located on the bottom of the horizontal irrigation pipeline between the discharge side of the irrigation pump and the inlet side of the double check valves.</p> <p>Verify that an automatic low pressure drain meets the following criteria:</p> <ul style="list-style-type: none"> - is level - has an orifice size of at least 3/4 in. for a 4-in. diameter irrigation and the size increases proportionally to an increase in irrigation pipe diameter - does not extend beyond the inside surface of the bottom of the irrigation pipeline and is at least 2 in. above grade - discharges at least 20 ft from any water supply. <p>Verify that the discharge from an automatic low pressure drain is controlled to prevent the drainage from reentering the water supply.</p> <p>Verify that a flow interrupter device is located in the pesticide supply between the pesticide injection unit and the pesticide supply tank or container.</p> <p>Verify that a check valve is located on the pesticide injection line between the point of pesticide injection into the irrigation system and the pesticide injection unit to prevent the overflow of the pesticide supply tank or container.</p> <p>Verify that a functional system interlock is provided.</p> <p>Verify that antisiphon devices and a functional systems interlock are installed and maintained to ensure proper function during chemigation.</p> <p>Verify that, during periods of chemigation, the system operator inspects the antisiphon devices and the functional systems interlock to ensure that they are functioning properly.</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PESTICIDE APPLICATION</p> <p>PM.25. Aerial</p> <p>PM.25.1.NC. The aerial application of pesticides must meet recordkeeping requirements (2 NCAC 9L.1002(c) and (d) and 9L.1006) [Added March 1998; Revised March 2005; Revised March 2010].</p> <p>PM.25.2.NC. The aerial application of pesticides must meet management and operational requirements (2 NCAC 9L.1002 (a), (b), (e) through (j)) [Added March 1998; Revised March 2010].</p>	<p>Verify that all agricultural aircraft operations (pilot or contractor) keep a written record to be completed within 72-h after each application.</p> <p>Verify that this record contains the following:</p> <ul style="list-style-type: none"> - name of contractor - name and address of the person for whom the pesticide was applied - identification of farm or land sites treated with pesticide(s) - name of crop which was treated - total number of acres treated - the year, month, day, and specific time when each pesticide application was completed - the brand name of the pesticide(s) and EPA registration number - amount of formulated product or active material applied per acre (must specify) - total gal or pounds per acre of the final tank mix applied per acre - name of pilot - signature of person completing this record. <p>Verify that each day of application is recorded as a separate record. (NOTE: This record keeping requirement must be fulfilled as soon as requested by an employee of the Pesticide Section for the purposes of a pesticide incident investigation. For pesticides covered under the Worker Protection Standards for Agricultural Pesticides, 02 NCAC 09L .1800, such records must be completed in accordance with 02 NCAC 09L .1807(b).)</p> <p>(NOTE: Exemptions from these requirements must be either during an emergency proclaimed by the commissioner or authorized by the Pesticide Board.)</p> <p>(NOTE: See PM.25.1.NC. for exemptions.)</p> <p>Verify that all agricultural aircraft operations in North Carolina comply with the Federal Occupational Safety and Health Act of 1971 (OSHA), the North Carolina Occupational Safety and Health Law, all regulations promulgated thereunder and the Federal Aviation Regulations part 137.</p> <p>Verify that each aerial application business has a licensed contractor.</p> <p>Verify that, prior to application, the pilot learns and confirms:</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.25.3.NC. The aerial pesticide applicators must meet reporting requirements for emergency or accidental releases (2 NCAC 9L.1002</p>	<ul style="list-style-type: none"> - the boundaries and exact location of the target area(s) - the identity of nontarget areas and safety hazards located on or adjacent to the target areas. <p>Verify that spray and spreading equipment is thoroughly rinsed after each agricultural aircraft operation.</p> <p>(NOTE: This rinsing requirement does not apply when the next agricultural aircraft operation will be made using the same pesticide, or if another pesticide, one which by its manufacturer's recommendations is compatible with that previously in the equipment, and will not result in any adverse effects or illegal residues.)</p> <p>Verify that rinsing is conducted in an area where an environmental hazard will not be created by the drainage or disposal of waste materials and conducted with methods that will not create an environmental or human hazard.</p> <p>Verify that, during application, the flow and mixture of the pesticide(s) are uniform.</p> <p>Verify that pilots and contractors utilize equipment that will maintain a uniform mixture and flow during application.</p> <p>Verify that, in any agricultural aircraft operation, pilots and contractors use and operate aircraft equipped with spray or spreading equipment suited according to its manufacturer's recommendations for the pesticide(s) to be applied.</p> <p>Verify that all aerial spray or spreading equipment is free of leaks and has a positive shutoff system to prevent leaking and dissemination of pesticides on any nontarget areas over which the flight is made.</p> <p>Verify that all aerial spray or spreading equipment does not allow spillage, dripping and backflow or create a hazard from vapors or drift.</p> <p>Verify that the loading area is kept reasonably free of pesticide contamination.</p> <p>Verify that no pesticide(s) are applied by an aerial applicator while any persons other than those assisting in the application are in the target area.</p> <p>Verify that the shape of the tank or hopper of the spray or spreading equipment allows complete drainage during flight and on ground.</p> <p>(NOTE: See PM.25.1.NC. for exemptions.)</p> <p>Verify that the contractor or pilot immediately notifies the Secretary of the Board of any emergency or accidental release of pesticide(s) from the application or auxiliary equipment.</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.25.5.NC. The handling and loading of pesticides for aerial applications must meet specific requirements (2 NCAC 9L.1004) [Added March 1998].</p>	<ul style="list-style-type: none"> - use a D4 or larger disk with a 45 whirlplate with the discharge directed with the airstream or not more than 10 degrees below the horizontal, and operated at a maximum pressure of 40 psi - a system producing a droplet size range not smaller than the above system, except for rotary-wing aircraft flying at speeds of 60 mph or less, in which case the nozzles may be directed downward - use a boom with outside nozzles placed no closer to the wingtips than 12-1/2 percent of the total wingspan distance - if the length of the boom of the spraying equipment exceeds the nozzle span, a bleeder line is provided from the end of the boom to the last nozzle on the boom. <p>(NOTE: See PM.25.1.NC. for exemptions.)</p> <p>Verify that pilots or personnel handling or loading toxicity category I pesticides wear approved respirators.</p> <p>Verify that filters and cartridges in respirators are changed in accordance with the manufacturer's recommendation.</p> <p>Verify that pilots or personnel handling or loading toxicity category I pesticides wear freshly laundered protective clothing and bathe and change such clothing daily or sooner if the situation warrants.</p> <p>Verify that pilots or personnel handling or loading toxicity category I pesticides wear chemical-resistant gloves and boots or overshoes, in good condition.</p> <p>Verify that aircraft cockpits are kept clean.</p> <p>Verify that, if a toxicity category I pesticide contacts the skin of any person during any part of the agricultural aircraft operation, the person washes or is washed immediately, thoroughly with detergent and water; and clothing is replaced with clean clothing.</p> <p>Verify that detergent and water adequate for personal washing is available at the pesticide loading site and at any pesticide handling site that is separated geographically from the loading site.</p>
<p>PM.25.6.NC. Pesticides must not be applied by aerial application in specific areas (2 NCAC 9L.1005) [Added March 1998].</p>	<p>(NOTE: See PM.25.1.NC. for exemptions.)</p> <p>Verify that pesticides are not applied by aircraft within the limits of any congested area except when permission is granted under Federal Aviation Regulation (FAR) 137.</p> <p>Verify that pesticides are not deposited by aircraft within 300 ft of the premises of schools, hospitals, nursing homes, churches, or any building (other than a</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.25.7.NC. Apiaries must be contacted prior to the application of aerial pesticides (2 NCAC 9L.1009) [Added March 1998].</p>	<p>residence) that is used for business or social activities if either the premises or the building is occupied by people.</p> <p>Verify that pesticides are not deposited by aircraft on the right-of-way of a public road or within 25 ft of the road, whichever is the greater distance.</p> <p>Verify that pesticides that are labeled toxic or harmful to aquatic life are not deposited in or near any body of water in such a manner as to be hazardous to aquatic life unless such aquatic life is the intended target of the pesticide.</p> <p>Verify that pesticides are not deposited within 100 ft of any residence.</p> <p>Verify that pesticides are not deposited onto any nontarget area in such a manner that it is more likely than not that adverse effect will occur.</p> <p>(NOTE: See PM.25.1.NC. for exemptions.)</p> <p>Verify that facilities who hire the services of an aerial applicator to apply a pesticide labeled as toxic to bees, notifies, based on available listings of registered apiaries, the owner or operator of any registered apiary located within one-half mile of the target area not less than 24-h nor more than ten days prior to the beginning of a single application or a seasonal spray schedule, giving the approximate time of day of application and type of pesticide to be used.</p> <p>(NOTE: Notification may be either oral or written. Notification for the purposes of the above requirement is defined as follows:</p> <ul style="list-style-type: none"> - written communication by: <ul style="list-style-type: none"> - U.S. mail - notification left at residence - notification left at alternate as designated on the honeybee registration list - oral communication by: <ul style="list-style-type: none"> - telephone - personal communication - verbal communication with an alternate as designated on the honeybee registration list.)

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
PESTICIDE APPLICATION PM.35. Other PM.35.1.NC. Licensed structural pest control operators and certified applicators must meet certain general requirements (2 NCAC 34.0101(b)) [Added March 1998]. PM.35.2.NC. The storage and handling of pesticide containers for structural applications must meet certain requirements (2 NCAC 34.0401) [Added March 1998]. PM.35.3.NC. The labeling of pesticide containers for structural applications must meet certain requirements (2 NCAC 34.0402) [Added March 1998].	<p>Verify that the methods and materials used in structural pest control procedures are in accordance with the current label registrations of federal and State of North Carolina agencies responsible for making such registrations.</p> <p>Verify that the possession, usage, application, storage, and disposal of all pesticides and all pesticide containers is in conformity with all federal and North Carolina State laws and regulations governing the possession, usage, application, storage, and disposal of pesticides and pesticide containers.</p> <p>Verify that licensed structural pest control operators and certified applicators maintain copies of current registered labels for all pesticides used; and make them available for inspection upon request of the Division or the Committee.</p> <p>Verify that all pesticides are kept securely in leakproof containers and appropriately labeled.</p> <p>Verify that containers of pesticide(s) are not left where pets, domestic animals, children, or other unauthorized persons might remove or consume the contents.</p> <p>Verify that food containers are not used as pesticide containers.</p> <p>Verify that, when pesticides are carried in or on a vehicle, a suitable storage space is provided thereon.</p> <p>Verify that all pesticide concentrates and poison baits that are stored in containers other than original are prominently labeled to give the following information:</p> <ul style="list-style-type: none"> - manufacturer's complete brand name of product - percentage of each active ingredient - EPA registration number - signal word (as it appears on the pesticide label) - use classification, if classified (as it appears on the label). <p>Verify that pesticide containers, except those stored in other than original containers and application equipment of 15 gal capacity or less, are prominently labeled to give the following information:</p> <ul style="list-style-type: none"> - manufacturer's complete brand name of product

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.35.4.NC. First aid equipment and procedures must be placed in certain areas for structural applications (2 NCAC 34.0403) [Added March 1998].</p> <p>PM.35.5.NC. Pesticides used for structural applications must only be used in a manner consistent with its labeling (2 NCAC 34.0405) [Added March 1998].</p> <p>PM.35.6.NC. Licensees and certified operators must take adequate spill control measures for structural applications (2 NCAC 34.0406) [Added March 1998].</p> <p>PM.35.7.NC. The storage of pesticides for structural applications must meet specific requirements (2 NCAC 34.0407) [Added March 1998].</p>	<ul style="list-style-type: none"> - the word "dilute" if diluted - if diluted, kind of diluent (water, oil, dust, etc.) - signal word (as it appears on the pesticide label). <p>Verify that first aid equipment and first aid procedures, approved by the Committee, or EPA or Federal OSHA, is placed in all vehicles in which pesticides are stored, carried, or transported and in all other areas where pesticides are stored or handled.</p> <p>Verify that pesticides are used only in a manner consistent with the labeling.</p> <p>Verify that licensees and certified applicators maintain adequate spill control materials, equipment, or a combination, at all locations used to store pesticides and on all service vehicles used to transport pesticides, based upon the type and quantity of pesticides present.</p> <p>(NOTE: For storage of pesticides that are not used for structural applications see PM.45.1.NC.)</p> <p>Verify that pesticides are stored to prevent leaking.</p> <p>Verify that pesticides are stored to facilitate inspections by the Division.</p> <p>Verify that pesticides are stored in labeled containers.</p> <p>Verify that the following information is clearly and prominently stated on each pesticide container:</p> <ul style="list-style-type: none"> - manufacturer's complete brand name of product - percentage of each active ingredient - EPA registration number

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<p>PM.35.8.NC. The storage of restricted use pesticides for structural applications must meet specific requirements (2 NCAC 34.0408) [Added March 1998].</p>	<ul style="list-style-type: none"> - signal word - use classification (general use or restricted use). <p>Verify that pesticides (formulated products or dilutions) are not stored in any container that is specifically designed to contain either beverage, feed, food or medicine or any container which has previously been used for a beverage, feed, food or medicine.</p> <p>Verify that pesticides are not stored in a manner that could cause the contamination of beverages, eating utensils, feed, fertilizer, food, medicine, other pesticides, seed, tobacco, tobacco products or in a manner otherwise likely to result in accidental ingestion by humans or domestic animals.</p> <p>Verify that pesticides are stored in accordance with label recommendations and requirements.</p> <p>Verify that pesticides are stored in accordance with the label requirements of non-pesticide products that are stored in the same storage area as the pesticides.</p> <p>Verify that, when unattended, pesticides are stored to prevent unauthorized access.</p> <p>Verify that pesticides are stored in an area that does not accumulate water and that is dry and ventilated.</p> <p>Verify that pesticide storage areas are free of combustible materials such as gasoline, kerosene, or petroleum solvents other than those associated with pesticide application and debris such as waste paper, rags, or used cardboard boxes.</p> <p>Verify that pesticide storage areas are separated from operations that present a fire hazard such as welding or burning.</p> <p>Verify that care is taken to minimize the fire hazard when providing supplemental heating to the storage area.</p> <p>Verify that restricted use pesticides are stored so as to prevent unauthorized access to the pesticides.</p> <p>Verify that, when unattended, the storage area is locked.</p> <p>Verify that a warning sign is posted beside all entrances to the storage area which states:</p> <p style="text-align: center;">PESTICIDE STORAGE, AUTHORIZED PERSONNEL ONLY. IN CASE OF EMERGENCY, CALL</p>

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<p>PM.35.9.NC. Termite control of basements and crawl-spaces after construction must meet specific requirements (2 NCAC 34.0503(a), (d), and (e)) [Added March 1998].</p>	<p>Verify that restricted use pesticides are stored to prevent contact with water resulting from cleanup, the intrusion of storm waters, leaks, impounded or flowing waters, or any other water source which represents a likely potential for flooding.</p> <p>Verify that restricted use pesticides are not stored within 50 ft horizontally of any private water supply or within 100 ft horizontally of any public water supply.</p> <p>Verify that a prefire plan is developed for each storage area.</p> <p>Verify that one copy of the plan, approved by the fire department or emergency services office having jurisdiction, is maintained in the office of the licensee or certified applicator for inspection by the Division; and one copy of the plan is filed with the fire department or emergency services office having jurisdiction.</p> <p>Verify that a request is made in writing to the local fire department or emergency services office having jurisdiction for no less than an annual inspection of the storage area.</p> <p>Verify that the licensee or certified applicator responsible for the storage area maintains a current inventory list by brand name and formulation of all pesticides, both general use and restricted use, stored in the storage area.</p> <p>(NOTE: An inventory list is considered current if it is updated every 30 days.)</p> <p>Verify that a copy of the inventory list is maintained at a separate location from the storage area, and is made available to the Division upon request.</p> <p>Verify that the Division is notified immediately of any emergency such as a fire, spill, or unintended release of restricted use pesticides into the environment from the storage area, if the emergency poses a hazard or imminent danger to man, animals, aquatic life, or threat of substantial damage to property.</p> <p>(NOTE: Such notification of the Division does not preclude notification being given to the appropriate local fire department, emergency services office, or other state, or Federal agencies requiring such notification.)</p> <p>(NOTE: A licensee may enter into a written agreement for the control or prevention of subterranean termites in a building after it has been constructed without having to abide by the following requirements provided that:</p> <ul style="list-style-type: none"> - the licensee has written proof, satisfactory to the Committee, that he or his authorized agent, treated the entire building for subterranean termites at the time of its construction as required in 2 NCAC 34.0505 (or comparable regulations by the committee at the time of treatment) - a written agreement is issued in compliance with 2 NCAC 34.0605.) <p>(NOTE: The following requirements do not apply to subterranean termite treatment performed using termite bait(s) provided the bait is labeled for protection of the entire structure and the licensee provides a warranty for the</p>

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<p>PM.35.10.NC. Termite control of slab-on-ground structures after construction must meet specific requirements (2 NCAC 34.0503(b), (d), and (e)) [Added March 1998].</p>	<p>control of subterranean termites on the entire structure.)</p> <p>Verify that the applicable requirements for termite control in basements and crawlspaces (2NCAC 34.0503(a)) (see Appendix 7-1 for details) are met.</p> <p>(NOTE: A licensee may enter into a written agreement for the control or prevention of subterranean termites in a building after it has been constructed without having to abide by the following requirements provided that:</p> <ul style="list-style-type: none"> - the licensee has written proof, satisfactory to the Committee, that he or his authorized agent, treated the entire building for subterranean termites at the time of its construction as required in 2 NCAC 34.0505 (or comparable regulations by the committee at the time of treatment) - a written agreement is issued in compliance with 2 NCAC 34.0605.) <p>(NOTE: These requirements do not apply to subterranean termite treatment performed using termite bait(s) provided the bait is labeled for protection of the entire structure and the licensee provides a warranty for the control of subterranean termites on the entire structure.)</p> <p>Verify that the applicable requirements for termite control in basements and crawlspaces (2NCAC 34.0503(b)) (See Appendix 701 for details) are met.</p>
<p>PM.35.11.NC. The prevention of termites in residential buildings under construction must meet specific requirements (2 NCAC 34.0505) [Added March 1998; Revised March 2005].</p>	<p>(NOTE: This checklist does not apply under the following conditions:</p> <ul style="list-style-type: none"> - subterranean termite treatment performed using termite bait(s) labeled for protection of the entire structure when the licensee provides a warranty for the control of subterranean termites on the entire structure - subterranean termite treatment performed using EPA registered topically applied wood treatment termiticides labeled for the protection of the entire structure when the licensee applies the material according to labeled directions and provides a warranty for the control of subterranean termites on the entire structure.) <p>Verify that a vertical barrier with a termiticide from the top of the grade to the top of the footing is established:</p> <ul style="list-style-type: none"> - in the soil along inside of the main foundation wall - along the entire perimeter of all multiple masonry chimney bases, pillars, pilasters, and piers - along both sides of partition or inner walls. <p>Verify that, after a building or structure has been completed and the excavation filled and leveled so that the final grade has been reached along the outside of the main foundation wall, a vertical barrier is established in the soil adjacent to the outside of the main foundation wall with a termiticide from the top of the grade to the top of the footing or to a minimum depth of 30 inches, whichever is less.</p>

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<p>PM.35.12.NC. The prevention of termites in commercial buildings under construction must meet</p>	<p>Verify that, where drain tile, French drains or other foundation drainage systems present a hazard of contamination outside the treatment zone, treatment is performed in a manner that will not introduce termiticide into the drainage system.</p> <p>Verify that a horizontal barrier is established in the soil within 3 ft of the main foundation, under slabs, such as patios, walkways, driveways, terraces, gutters, etc., attached to the building.</p> <p>Verify that treatment is performed before slab is poured, but after fill material or fill dirt has been spread.</p> <p>Verify that a horizontal barrier is established in the soil under the entire surface of floor slabs, such as basements, porches, entrance platforms, garages, carports, breezeways, sun rooms, etc.</p> <p>Verify that the treatment is performed before slab is poured but after fill material or fill dirt has been spread.</p> <p>Verify that a vertical barrier is established in the soil around all critical areas, such as expansion and construction joints and plumbing and utility conduits, at their point of penetration of the slab or floor or, for crawl space construction, at the point of contact with the soil.</p> <p>Verify that, if concrete slabs are poured prior to treatment, treatment of the slabs is performed as would be required for such slabs after construction (2 NCAC 34.0503(a) or (b)) (See Appendix 7-1 for details).</p> <p>(NOTE: The buyer of the property and/or his authorized agent may release the licensee from further treatment of slab areas provided such release is obtained in writing on the form prescribed by the Division.)</p> <p>Verify that by the date of the treatment completion, the licensee or his employee places a durable sticker/label, no less than 3 inches square, on the meter base, circuit breaker box or inside surface of kitchen cabinet door or other readily noticeable location providing, at a minimum, the following information:</p> <ul style="list-style-type: none"> - the statement: "This structure was treated for the prevention of subterranean termites. A warranty has been issued to the builder. If you did not receive your copy of this warranty at closing, contact your builder or the company below for additional warranty information." in boldface type - name, address and telephone number of the company performing the treatment - date of final treatment. <p>Verify that all treatments are performed at the label-recommended rate and concentration only.</p>

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<p>specific requirements (2 NCAC 34.0506) [Added March 1998].</p> <p>PM.35.13.NC. Specific recordkeeping requirements must be met for wood-destroying organisms (2 NCAC 34.0604) [Added March 1998; Revised March 2003; Revised March 2005].</p>	<p>Verify that a vertical barrier is established:</p> <ul style="list-style-type: none"> - in the soil along inside of the main foundation wall - along the entire perimeter of all multiple masonry chimney bases, pillars, pilasters, and piers - along both sides of partition or inner walls with a termiticide from the top of the grade to the top of the footing. <p>Verify that, after a building or structure has been completed and the excavation filled and leveled so that the final grade has been reached along the outside of the main foundation wall, a vertical barrier is established in the soil adjacent to the outside of the main foundation wall with a termiticide from the top of the grade to the top of the footing, according to the label.</p> <p>Verify that, where drain tile, French drains or other foundation drainage systems present a hazard of contamination outside the treatment zone, treatment is performed in a manner that will not introduce termiticide into the drainage system.</p> <p>Verify that a horizontal barrier is established in the soil within 3 ft of the main foundation, under slabs, such as patios, walkways, driveways, terraces, gutters, etc.</p> <p>Verify that treatment is performed before slab is poured, but after fill material or fill dirt has been spread.</p> <p>Verify that a vertical barrier is established in the soil around all critical areas, such as expansion and construction joints and plumbing and utility conduits, at their point of penetration of the slab of floor or, for crawl space construction, at the point of contact with the soil.</p> <p>Verify that, if concrete slabs are poured prior to treatment, treatment of the slabs is performed as would be required for such slabs after construction (2 NCAC 34.0503(a) or (b)) (see Appendix 7-1 for details).</p> <p>Verify that a duplicate of each written agreement and waiver (if applicable), for the control or prevention of any wood-destroying organism is kept by the licensee for a minimum of 2-yr beyond the expiration date of the written agreement.</p> <p>Verify that the duplicate of each written agreement contains, in addition to the information specified for contractual agreements for existing buildings or buildings under construction (2 NCAC 34.0605(a) or 34.0605(d)), the following:</p> <ul style="list-style-type: none"> - EPA approved brand name of pesticide used - names of all employees who applied pesticide - information required by EPA - for restricted use pesticides the concentration and approximate total volume of each pesticide applied.

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<p>PM.35.14.NC. Specific precautions must be taken for the use of household pesticides (2 NCAC 34.0701) [Added March 1998].</p>	<p>Verify that, for all treatments performed pursuant to 02 NCAC 34 .0505 or .0506, the following records are made and maintained:</p> <ul style="list-style-type: none"> - the date of each termiticide application - the portion or portions of the structure treated - the approximate volume of termiticide applied during each treatment - the concentration at which the termiticide is applied. <p>Verify that a duplicate of each wood-destroying insect or wood-destroying organism report is kept by the licensee for a minimum of 2-yr beyond the date of issuance.</p> <p>Verify that non-commercial certified applicators maintain the following records for 2-yr beyond the last date of treatment:</p> <ul style="list-style-type: none"> - EPA approved brand name of all pesticides used - concentration and approximate total volume of pesticide applied - names of all employees that applied pesticide - target pest - site of application - date of application - information required by EPA. <p>Verify that, if the pesticide used to control any wood-destroying organism requires or recommends monitoring or inspecting for the pest to be controlled, records of all the monitoring or inspection activities are made and maintained.</p> <p>For all treatments performed for subterranean termite prevention, the licensee places a record of treatment in the permit box or, if no box exists, with the building permit on the job site. T</p> <p>Verify that the treatment record is on a form prescribed by the Division and includes at least the following information:</p> <ul style="list-style-type: none"> - date of application(s) - specific area(s) treated during each application - name of termiticide applied - approximate volume of termiticide applied - date of final treatment. <p>Verify that household pest control servicemen's kits that contain pesticides are not left where pets, domestic animals, children or other unauthorized persons might remove, contact, or consume, the contents.</p> <p>Verify that, when covered bait stations are required by the label for acutely toxic rodenticidal baits, each bait station is locked and adequately marked with the skull and crossbones at least 1 in. high and the word "poison," each letter at least 1 in. high, and the name, address, and telephone number of the licensee and name of</p>

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<p>PM.35.15.NC. Household pest control must meet specific requirements (2 NCAC 34.0702) [Added March 1998].</p>	<p>the company the licensee represents.</p> <p>Verify that fogging operations are conducted in accordance with the labeling of the pesticide applied.</p> <p>Verify that space and residual pesticide applications for the purpose of controlling household pests is performed in accordance with the labeling of the pesticide applied.</p> <p>Verify that, in areas where treatment is to be made, all open food or food-stuffs, or drug commodities and all utensils or equipment used in the preparation of food or drugs are adequately covered or removed before the application of space sprays, or complete, or spot surface residual sprays, to insure against contamination by pesticidal materials.</p> <p>(NOTE: This requirement does not apply where such pesticidal materials are approved by EPA and State of North Carolina label registrations for use without such precautions.)</p> <p>Verify that space sprays, or complete surface residual sprays, are not applied unless the structure or that portion of the structure to be treated is free of occupants and pets during the treatment and subsequent ventilation period(s), except where such pesticidal materials are approved by EPA and State of North Carolina label registration for use without such precautions.</p>
<p>PM.35.16.NC. Specific recordkeeping requirements must be met for household pest control (2 NCAC 34.0703) [Added March 1998; Revised March 2003].</p>	<p>Verify that written records on the treatment for the control of all household pests are maintained and made available for inspection at any time during regular business hours upon request from the Division.</p> <p>Verify that the records include the following information:</p> <ul style="list-style-type: none"> - name's and addresses of property owners or their authorized representative - name and address of company represented by the certified applicator or licensee or their authorized representatives and the license number of licensee responsible for treatment - address(es) of property(ies) treated, type(s) of treatment(s), and date(s) treatment(s) performed - common name(s) of pest(s) to be controlled or covered by the initial agreement or any subsequent treatments - EPA approved brand name of pesticide used - information required by EPA. <p>Verify that non-commercial certified applicators maintain the following records of pesticides applied:</p> <ul style="list-style-type: none"> - EPA approved brand name of all pesticides applied

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PM.35.17.NC. Spot fumigation must meet specific requirements (2 NCAC 34.0801) [Added March 1998; Revised March 2007].	<ul style="list-style-type: none"> - target pest(s) - site of application - date of application - information required by EPA. <p>Verify that records are retained for 2-yr beyond the last date of treatment.</p> <p>(NOTE: A pesticide used as a spot fumigant in gassing rodents is not considered a fumigant for the purposes of these fumigation requirements, provided that the pesticide is applied in such minimal quantities and in such locations that it, or the gases from it, will not harm human beings or domestic animals. All necessary precautions must be taken with the pesticide including following the recommended procedures as outlined by the manufacturer.)</p> <p>Verify that, prior to the application or release of fumigant(s), suitable warning signs are securely and conspicuously posted in the following locations:</p> <ul style="list-style-type: none"> - at the ground level on the outside of all doors and entrances to the structure - at least one warning sign on the outside of each side of the structure or enclosed space to be fumigated - outside on all doors and entrances, to enclosed space(s) or common carriers to be fumigated. <p>Verify that warning signs are not less than 10 in. by 12 in., printed, painted or made in indelible red ink or paint, insoluble in water, upon a white background.</p> <p>Verify that all lettering on the sign is not less than 1/4th in. high.</p> <p>Verify that warning signs for outside of structure(s) or enclosed spare(s) are as follows:</p> <div style="text-align: center;"> <p>DANGER</p> <p>(Skull And Crossbones) FUMIGATING WITH (Skull And Crossbones)</p> <p> (Name of Fumigant)</p> <p>DEADLY POISON</p> <p>ALL PERSONS ARE WARNED TO KEEP AWAY</p> <p>Name of Fumigator _____</p> <p>Address _____</p> <p>Day Telephone Number _____</p> <p>Night Telephone Number _____</p> </div> <p>Verify that the words "Danger" and "Deadly Poison" are in block lettering at least 2 in. high.</p> <p>Verify that the name of the fumigant is at least 5/8ths in. high.</p>

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<p>PM.35.18.NC. Structures must be declared safe for reoccupancy after fumigation (2 NCAC 34.0802) [Added March 1998; Citation Revised March 2007].</p> <p>PM.35.19.NC. Specific recordkeeping requirements must be met for spot fumigation (2 NCAC 34.0803) [Added March 1998; Revised March 2003].</p>	<p>Verify that the skull and crossbones are at least 1 in. high.</p> <p>Verify that warning signs for outside of structure or enclosed space are be as follows:</p> <p style="text-align: center;">Warning: An area within this structure is being fumigated with a deadly poison. All persons entering this building should avoid areas so marked.</p> <p>Verify that all lettering on the sign is not less than 1 in. high.</p> <p>Verify that the skull and crossbones are at least 1 in. high on the sign.</p> <p>Verify that unauthorized persons or any domestic animals do not enter or re-enter the structure or enclosed fumigated space until the applicator or operator in charge of the fumigation operation has personally checked the structure or space with suitable gas-detecting equipment or monitoring device and found the structure or enclosed space safe for occupancy by human beings and domestic animals.</p> <p>Verify that written records are maintained on all fumigation operations and are made available for inspection, upon request, from the enforcement agency or committee any time during regular business hours.</p> <p>Verify that the records include the following information:</p> <ul style="list-style-type: none"> - name's and addresses of property owners or their authorized representative - name and address of company represented by the certified applicator or licensee or their authorized representatives and the license number of licensee responsible for treatment - address of property(ies) to be fumigated - common name(s) of pest(s) to be fumigated - EPA approved common name of pesticide used - if a restricted-use pesticide is used, that information required by EPA - if the pest to be fumigated is a wood-destroying organism, all of the information required in contractual agreements for such organisms (2 NCAC 34.0605) are included (only applies to the fumigation of structures). <p>Verify that non-commercial certified applicators maintain the following records of pesticides applied:</p> <ul style="list-style-type: none"> - EPA approved brand name of all pesticides applied - target pest(s) - exact site of application - date of application - any information required by EPA.

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<p>PM.35.20.NC. Spot fumigation must meet certain general requirements (2 NCAC 34.0804) [Added March 1998].</p>	<p>Verify that records are retained for 2 yr beyond the last date of treatment or the expiration of the written agreement, if applicable.</p> <p>Verify that each general fumigation, fumigation, and fumigation operation is personally directed, supervised, and performed by a licensed fumigator or a person certified in fumigation.</p> <p>Verify that the certified applicator or the licensed fumigator is available and on call at all times during the fumigation period of each fumigation job in progress.</p> <p>Verify that the fumigants used in fumigation, general fumigations, and fumigation operations are used only for the control of specific pests and in the manner of application stipulated on the label of the original fumigant container.</p> <p>Verify that the possession selection, usage, application, storage, and disposal of all fumigants and all fumigant containers is in conformity with all federal and North Carolina State laws and regulations, and particularly with manufacturer's recommendations, directions, and precautions as specifically set forth in registration labels.</p>
<p>PM.35.21.NC. Fumigation activities must meet certain safety requirements (2 NCAC 34.0801(c) and 34.0805) [Added March 1998].</p>	<p>Verify that, if there is an approved antidote first aid kit for the fumigant involved and the antidote may be legally administered by the fumigator, such an antidote-first aid kit is assembled and maintained in sanitary and serviceable condition and is continuously and immediately available at the fumigation site during the application of fumigant(s) and during the ventilation period.</p> <p>Verify that the antidote first aid kit contains the specific items required for each and every fumigant in the conduction of business at each business location of the certified applicator or the licensed fumigator and otherwise conforms to all specifications prescribed by the North Carolina State Board of Pharmacy or the manufacturer.</p> <p>Verify that antidote-first aid kit items are labeled individually, and kept in a single, sturdy box marked "Antidote-First Aid Kit."</p> <p>Verify that all exhausted or expired respirator canisters are destroyed.</p> <p>Verify that fumigants are not used in any fumigation operation unless there is an approved respirator canister for fumigant.</p> <p>Verify that all fumigants are safely stored with regard to fire, explosion, leakage or other hazards to the health and safety of human beings and domestic animals under conditions specified by the manufacturer or supplier or North Carolina State and/or Federal label registration.</p>

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	<p>(NOTE: The following requirements in this checklist item do not apply to the use of fumigants to control insects, rodents, and other pests outside of structures or buildings, or to spot treatment within structures or buildings or to fumigation of railroad box cars, trucks, aircraft, special rooms, tanks, vaults, chambers, and similar structures of limited size where the fumigator remains outside the space being fumigated and is not exposed to toxic concentrations of the fumigant(s) used. These exemptions do not, however, relieve the individual in charge of the fumigation from full responsibility in connection with all safety precautions and requirements.)</p> <p>Verify that the certified applicator or the licensed fumigator in charge of the fumigation, general fumigation, and fumigation operation, carries out the following:</p> <ul style="list-style-type: none"> - instructs each person working with fumigants to know the location, purpose, use and maintenance of personal protective equipment and when and how to use this equipment - instruct each employee and each guard assigned to fumigation work to report immediately to the certified applicator or licensed fumigator, any irregularities or emergencies beyond his control. <p>Verify that each certified applicator or licensed fumigator, when engaged in fumigation work, maintains at his business location up-to-date information on the handling and use of fumigants, devices and materials for testing for the presence of fumigants; and safety and testing devices, such as respirators, canisters, self-contained breathing devices, and gas detectors, which are in serviceable condition, as required by the labeling of the fumigant(s) being used.</p> <p>Verify that certified applicators, licensed fumigators, and all other persons working with fumigants, are able to apply proper methods of artificial respiration and have in their possession a chart of instructions for artificial respiration.</p> <p>Verify that each certified applicator and each licensed fumigator, is outfitted with a fumigation safety kit, which is maintained in completely serviceable condition and is continuously and immediately available at the fumigation site during the fumigation period of each fumigation job in progress.</p> <p>Verify that each member of the fumigation crew is familiar with the contents and use of a safety kit.</p> <p>Verify that the safety kit contains a serviceable respirator or self-contained breathing apparatus, as required by the label of the fumigant being used, a gas detector and a flashlight.</p> <p>Verify that the respirator or breathing apparatus are of a type approved by the United States Mining Enforcement and Safety Administration or National Institute for Occupational Safety and Health with correct canister and gas detector for the type of fumigant used.</p>

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<p>PM.35.22.NC. Fumigation crews must meet specific requirements (2 NCAC 34.0806) [Added March 1998].</p>	<p>Verify that a fumigation crew consists of not less than 2 individuals.</p> <p>Verify that one of these individuals is either a certified applicator or a licensed fumigator, and the second individual is trained in fumigation.</p> <p>Verify that no fumigation operation is conducted unless and until at least the 2 individuals described above work together, jointly and concurrently, during release or application of the fumigant(s) and during initial ventilation of the structure(s) fumigated.</p> <p>Verify that at least 2 members of the fumigation crew wear a serviceable, respirator or self-contained breathing apparatus of a type approved by the United States Mining Enforcement and Safety Administration or National Institute for Occupational Safety and Health with the correct canister for the type of gas used while in the enclosed space during and after liberation of the fumigant, until initial ventilation is completed, except in those cases specifically excluded by label registration.</p> <p>Verify that, for residential structures, no one other than the certified applicator or licensed fumigator is permitted to re-enter the fumigated structure(s) or premise(s) until the certified applicator or licensed fumigator has ascertained, by personal inspection, without a respirator and by suitable tests, that the structure(s) or premise(s) is safe for re-occupancy.</p> <p>Verify that, for commercial structures, no one other than the certified applicator or licensed fumigator or a person trained in fumigation is permitted to re-enter the fumigated structure(s) or premise(s) until the certified applicator or licensed fumigator or a person trained in fumigation have ascertained, by personal inspection, without a respirator and by suitable tests, that the structure(s) or premise(s) is safe for re-occupancy.</p>
<p>PM.35.23.NC. Fumigation notices must meet specific requirements (2 NCAC 34.0807) [Added March 1998].</p>	<p>Verify that each licensed fumigator, before performing fumigation on any residential structure, notifies the Division in advance of the fumigation.</p> <p>Verify that such notification is received by the Division 5 days in advance of the fumigation.</p> <p>Verify that the licensee or his authorized agent notifies the Division in advance of any cancellation, or any change in the date of the fumigation.</p> <p>Verify that, before performing fumigation in any structure or enclosed space, the police department and fire department having jurisdiction over the location where the fumigation operation is to be performed, and owners, owners-agents, and occupants of all dwellings and places of business within 10 ft of the structure(s) or enclosed space(s) to be fumigated are notified before fumigation.</p>

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	<p>Verify that, in rural areas having no fire department, the office of the sheriff and county health departments having jurisdiction over the location where the fumigation operation is to be performed, are notified before performing fumigation.</p> <p>Verify that the information given in such notices is as follows:</p> <ul style="list-style-type: none"> - name, of certified applicator or licensed fumigator in charge of fumigation operation together with his day and night telephone numbers if different - name and address of the company which the certified applicator or the licensed fumigator represents - location and/or address of structure(s) or enclosed space(s) to be fumigated as well as its character and use - name of fumigant used - date and time of the release of fumigant and approximate fumigation exposure period. <p>(NOTE: The requirements of prior notification of fumigation apply at all times to inhabited vessels of all types and classes excluding commercial freighters, and to house trailers or mobile homes. This requirement of prior notification of fumigation does not apply to fumigation operations performed in or by means of special rooms, vaults, chambers, tanks, and similar structures or to the fumigation of railroad box cars, trucks, aircraft or common carriers or to the fumigation of insects, pests or rodents in an open area or to spot fumigation operations. The fumigation of common carriers must be performed in accordance with the latest rules and regulations of the United States Interstate Commerce Commission, Federal Department of Transportation, and other federal agencies where applicable.)</p> <p>Verify that notice of warning is served by the certified applicator or licensed fumigator upon the adult occupant responsible for the structure or enclosed space to be fumigated not later than 3-h in advance of and before any fumigation operation.</p> <p>Verify that, if an adult occupant responsible for the structure or enclosed space is not present, said notice of warning is attached in a conspicuous manner on the entrance or entrance to such structure or enclosed space occupied by human beings.</p> <p>Verify that the certified applicator or licensed fumigator, prior to the fumigation operation, advises the property owner or holder of such materials, such as food and drugs, which may be contaminated or damaged by the fumigant to be used and hands said property owner or holder a printed list of items to be removed from the structure or enclosed space as required on the registered label of the fumigant to be used, and other precautions to be taken by the property owner or holder.</p> <p>Verify that no vessel is fumigated until the captain or other responsible officer has furnished to the certified applicator or licensed fumigator in charge of the fumigation operation a signed statement that:</p>

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<p>PM.35.24.NC. Fumigation application must meet specific requirements (2 NCAC 34.0808) [Added March 1998].</p>	<ul style="list-style-type: none"> - he/she has mustered the vessel's crew and caused the members thereof and all other persons aboard the vessel to leave and remain away from such vessel during the fumigation operation - he/she will not permit their return until a certificate of clearance signed by the certified applicator or licensed fumigator in charge of the fumigation operation has been delivered to the captain or other responsible officer, or in their absence, conspicuously posted, stating the vessel is safe for human occupancy. <p>Verify that the dwelling or place of business to be fumigated and all parts thereof is vacated by human beings and domestic animals during the fumigation operation.</p> <p>Verify that dwellings or enclosed spaces which are physically joined to or in contact with or within 10 ft of the structure to be fumigated are vacated by human beings and domestic animals during the fumigation and ventilation periods.</p> <p>(NOTE: Apartments within a multiple unit apartment building may be fumigated only after proper sealing of the area to be fumigated and only after adjacent apartments on all sides and those apartments on the next floor, directly above and below, are vacated. All the herein described adjacent units must be properly ventilated during the entire exposure and ventilation periods.)</p> <p>Verify that the certified applicator or licensed fumigator in charge of the fumigation operation:</p> <ul style="list-style-type: none"> - is present and personally makes a careful examination of all parts of the structure to be fumigated, including locked rooms, compartments, and closets, and of dwellings or enclosed spaces physically joined to or in contact with said structure - verifies that no humans or domestic animals have remained therein - verifies that all necessary precautions have been undertaken to safeguard the lives and health of all persons and domestic animals occupying neighboring structures and buildings. <p>Verify that fumigation of structures is performed in strict accordance with the registered label directions and precautions for the intended use of the fumigant, provided there is sufficient distance along the entire length of the passageway between the structure to be fumigated and all adjacent occupied structures to permit comfortable, free and reasonable passage:</p> <ul style="list-style-type: none"> - for the members of the crew to work - for the guard on duty to patrol and make frequent periodic inspections - for the certified applicator or licensed fumigator to make tests along the passageway for escaping gas with the gas-detecting equipment and otherwise.

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<p>PM.35.25.NC. The person in charge of fumigation must inspect the site before the fumigant applied (2 NCAC 34.0810(a) (1) through (a) (5)) [Added March 1998; Revised March 2007].</p>	<p>Verify that no certified applicator or licensed fumigator fumigates any structure or enclosed space with any fumigant if the structure or enclosed space to be fumigated is less than 10 ft away from any other structure, measured by their closest points unless such other structure are vacated of all human beings and domestic animals during the entire fumigation and ventilation periods.</p> <p>Verify that premises to be fumigated other than structures or enclosed spaces are sealed in such a manner as to adequately confine the fumigant to the space intended to be fumigated.</p> <p>Verify that any structure, which cannot be made reasonably gas-tight by sealing or tenting is not fumigated.</p> <p>Verify that all structures to be fumigated for the control and/or elimination of infestations of drywood termites, wood boring beetles or other structural infesting pests are covered completely with a gas-retaining cover in advance of the release of any fumigant.</p> <p>Verify that, immediately before the fumigant is applied or introduced into a structure or enclosed space, the certified applicator or licensed fumigator, in charge of the fumigation operation makes a final, personal inspection of the structure or enclosed space and ascertains the following:</p> <ul style="list-style-type: none"> - that all preparations have been completed - that no human being or domestic animal is present within the structure or enclosed space to be fumigated, or any adjacent structures or enclosed spaces that were to be vacated because of danger from the fumigation operation - that no open fires, open flames, pilot lights, or oil lamps are burning - that all personnel not engaged in the fumigation operation are outside the structure or enclosed space to be fumigated - that all known foods, drugs or other materials subject to contamination by the fumigation have been removed from the structure or enclosed space to be fumigated - that all doors, windows, and all other means of access to the structure or enclosed space, except exits to be used by the fumigation crew, have been locked or barred.
<p>PM.35.26.NC. The fumigation site must be secured during fumigation (2 NCAC 34.0810(a) (6) and (7)) [Added March 1998; Citation Revised March 2007].</p>	<p>Verify that exits to be used by the fumigation crew are locked or barred promptly after the fumigant has been released or introduced into the structure or enclosed space.</p> <p>Verify that all doors and other entrances that can be opened from the outside are secured and the building keys remain in the possession of the certified applicator or licensed fumigator in charge of the fumigation operation for the entire fumigation period.</p> <p>(NOTE: The above requirements for securing the entrances and exits does not</p>

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<p>PM.35.27.NC. Warning signs must be posted before fumigation (2 NCAC 34.0810(b)) [Added March 1998].</p>	<p>apply to complete general fumigation performed by means of tents, tarpaulins or other complete sealing covers where there is a guard on duty, or to spot fumigation.)</p> <p>Verify that, prior to the application or release of fumigant, suitable warning signs are securely and conspicuously posted:</p> <ul style="list-style-type: none"> - at the ground level on all doors and entrances to the structure - at least one warning sign on each side of the structure, common carrier or enclosed space to be fumigated - in tent fumigations warning signs must be placed securely and conspicuously on the outside of the tents or covers in the above indicated locations - at all doors and entrances to common carriers or enclosed spaces to be fumigated - upon all gangplanks, ladders, etc., from the dock, pier or land to the vessel. <p>Verify that these warning signs are as follows:</p> <div style="text-align: center;"> <p>DANGER</p> <p>(Skull And Crossbones) FUMIGATING WITH (Skull And Crossbones)</p> <p>(Name of Fumigant)</p> </div> <div style="text-align: center;"> <p>DEADLY POISON</p> <p>ALL PERSONS ARE WARNED TO KEEP AWAY</p> </div> <p>Name of Fumigator _____</p> <p>Address _____</p> <p>Day Telephone Number _____</p> <p>Night Telephone Number _____</p> <p>Verify that these warning signs are not less than 10 in. by 12 in., printed, painted, or made in indelible, red ink or paint, insoluble in water, upon a white background.</p> <p>Verify that the words "Danger" and "Deadly Poison" are in block lettering at least 2 in. high.</p> <p>Verify that the name of the fumigant is at least 5/8 in. high.</p> <p>Verify that the skull and crossbones are at least 1 in. high.</p> <p>Verify that all other lettering on the warning sign is not less than 1/4 in. high.</p>
<p>PM.35.28.NC. Guards must be on site during fumigation (2 NCAC 34.0801(b) and</p>	<p>(NOTE: The following requirement of posting a guard or watchman does not apply to spot fumigation, or during the fumigation of railroad box cars, trucks, aircraft, vaults, common carriers and similar structures of limited space, or when</p>

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<p>34.0810(c)) [Added March 1998; Citation Revised March 2007].</p>	<p>using pure chloropicrin, provided the structure or enclosed space can be adequately locked, unless deemed necessary by the certified applicator or the licensed structural pest control operator in charge of the fumigation operation. This does not relieve the certified applicator or the licensed structural pest control operator in charge of the fumigation operation, from full responsibility in connection with all other safety precautions and requirements.)</p> <p>Verify that persons designated and assigned as guards or watchmen are on the site during the entire fumigation period and until the structure or enclosed space has been ventilated and declared safe for occupancy.</p> <p>Verify that all guards are capable, awake and alert and remain on duty at all times at the structure or enclosed space being fumigated.</p> <p>(NOTE: One guard or watchman is considered sufficient for each fumigation operation, unless, in the judgment of the certified applicator or licensed fumigator in charge of the fumigation operation, the conditions and circumstances necessitate additional guards or watchmen.)</p> <p>Verify that the guards or watchmen prevent the entrance of unauthorized personnel into said structure or enclosed space or danger area while the structure or enclosed space is being fumigated, and after the exposure period and during the ventilation period.</p> <p>Verify that the guard or watchman(men) also make frequent inspections of tarps or other sealing covers, and make, or cause to be made, necessary repairs, and immediately notify the certified applicator or licensed fumigator in charge of the fumigation operation, of any irregularities or emergencies beyond their control, including damaged or opened tarps, tarpaulins, or covers.</p> <p>Verify that guards and watchmen are properly instructed and are under the immediate supervision of the certified applicator or licensed fumigator in charge of the fumigation operation, during and throughout the entire fumigation period.</p>
<p>PM.35.29.NC. A final clearance inspection must be performed after fumigation (2 NCAC 34.0811) [Added March 1998].</p>	<p>Verify that the certified applicator or licensed fumigator in charge of the fumigation operation personally determines by sensory perception and also using suitable gas-detecting or monitoring devices or other materials that the entire structure or enclosed space fumigated, including beds, bedding and other materials therein, have been ventilated sufficiently to permit safe occupancy or reoccupancy of human beings and domestic animals.</p> <p>Verify that, in no instance, ventilation or aeration time is not less than that recommended by the manufacturer of the fumigant on the registered label, fumigation manual, technical fumigation literature or in the absence thereof, less than that dictated by good industry fumigation practice.</p>

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PM.35.30.NC. The fumigation of vaults, tanks, and chambers must meet specific requirements (2 NCAC 34.0812) [Added March 1998].	<p>Verify that each special room, vault, tank, chamber, or other similar structure being maintained or used for fumigation is so located, constructed, and ventilated that when in operation or being ventilated the chamber or said structure of similar design does not constitute a danger to the health or life of human beings and domestic animals.</p> <p>Verify that fumigation enclosures as set forth in this checklist item are locked during the fumigation period.</p> <p>Verify that each special room, vault, tank, chamber, or other similar structure is gas-tight.</p> <p>Verify that, when any escape or leakage of a fumigant from a special room, vault, tank, chamber or other similar structure is discovered, no further fumigation operations is conducted, unless and until such escape or leakage of said fumigant from such structure is properly and effectively corrected.</p> <p>Verify that a permanent warning notice of the same design specified for other fumigation operations (2 NCAC 32.0810(b)) is securely and conspicuously attached on the outside of every door or other entrance to said special room, vault, tank, chamber, or other similar structure.</p> <p>(NOTE: No guard, watchman or official notice of fumigation is necessary when fumigation is conducted in special rooms, vaults, tanks, chambers, or structures of similar design, provided all other applicable precautionary measures and requirements are observed.)</p>

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PESTICIDE APPLICATION PM.40. Documentation PM.40.1.NC. Licensed applicators must meet specific recordkeeping requirements (2 NCAC 9L.1402) [Revised March 2010].	<p>Verify that all licensed applicators using ground equipment keep for 3 yr (and make available to the Commission) records of all applications of restricted use pesticides showing the following:</p> <ul style="list-style-type: none"> - name of licensed pesticide applicator or licensed public operator - name and address of the person for whom the pesticide was applied - identification of farm or site treated with pesticides - name of crop, commodity, or objects which were treated with pesticides - approximate number of acres or size or number of other objects treated - the year, month, date and the specific time of day when each pesticide application was completed and each day of application shall be recorded as a separate record - brand name of the pesticides and USEPA registration number - amount (volume or weight) of pesticide formulations or active ingredients applied per unit of measure - names of persons applying pesticides.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.45.</p> <p>STORAGE MIXING HANDLING</p> <p>PM.45.1.NC. The storage of any pesticide must meet specific requirements (2 NCAC 9L.1902).</p>	<p>Verify that pesticides are stored to prevent leaking and to facilitate inspection.</p> <p>Verify that formulated pesticide products are not stored in unlabeled containers.</p> <p>Verify that the following minimum information is shown clearly and prominently on any containers of formulated pesticide:</p> <ul style="list-style-type: none"> - common chemical name - percentage of each active ingredient - USEPA registration number - signal word - use classification (restricted or general use). <p>Verify that pesticides (formulated products or dilutions) are not stored in any food, feed, beverage, or medicine container that has previously been used for such purposes, or that is specifically designed to contain only those products.</p> <p>Verify that pesticides are not stored in a manner which could cause the contamination of foods, feeds, beverages, eating utensils, tobacco, tobacco products, other pesticides, seeds, or fertilizers, or otherwise likely to result in accidental ingestion by humans or domestic animals.</p> <p>Verify that pesticides are stored in accordance with the following:</p> <ul style="list-style-type: none"> - storage recommendations, if any, on their labeling - labeling on all other products, including nonpesticide products, held in the same storage area. <p>Verify that, when unattended, pesticides are stored to prevent unauthorized access.</p> <p>Verify that pesticide storage areas are free of combustible materials such as gasoline, kerosene, or petroleum solvents other than those associated with pesticide application and debris such as waste paper, rags, or used cardboard boxes which may provide an ignition source.</p> <p>Verify that pesticides storage areas are separated from other operations that present a fire hazard such as welding or burning.</p> <p>Verify that appropriate care is taken to minimize fire hazard potential when providing supplemental heating to storage during winter months.</p>

COMPLIANCE CATEGORY: PESTICIDE MANAGEMENT North Carolina Supplement	
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PM.45.2.NC. Storage facilities for restricted use pesticides must meet specific requirements (2 NCAC 9L.1905) [Added March 1998].	<p>Verify that restricted use pesticide storage areas utilize security precautions that prevent unauthorized access to pesticides.</p> <p>Verify that, as a minimum, non-display pesticide storage areas are locked when unattended.</p> <p>Verify that a warning sign is posted beside all entrances to non-display pesticide storage areas stating "PESTICIDE STORAGE," "AUTHORIZED PERSONNEL ONLY," "IN CASE OF EMERGENCY CALL _____."</p> <p>Verify that pesticide spills are cleaned up immediately.</p> <p>Verify that floor-sweeping compounds such as adsorptive clay, sand, sawdust, lime, or similar suitable materials are kept on hand to absorb spills or leaks.</p> <p>Verify that safe disposal techniques are employed when disposing of pesticide contaminated adsorptive materials.</p> <p>Verify that pesticides are stored to prevent contact with water resulting from area cleanup, the intrusion of storm waters, leaks, or impounded or flowing waters, or any other source that represents a likely potential for flooding.</p> <p>Verify that pesticides are not stored within 100 ft horizontally of a public water supply.</p> <p>Verify that pesticides are not stored within 50 ft horizontally of a private water supply.</p> <p>(NOTE: An exemption from the requirements of this checklist item may be granted by the Board upon receipt of special written request for such exemption from the owner or operator of a storage facility. Each request must describe existing conditions requiring such exemption.)</p> <p>Verify that all appropriate state and local fire codes and building codes and all applicable state environmental laws and regulations are complied with.</p> <p>Verify that a prefire plan for the storage facility is developed.</p> <p>(NOTE: The prefire plan is a description of the facility's plans and procedures for management of fires involving pesticides. A suggested prefire plan format is the publication, "Pre-Planning and Guidelines for Handling Agricultural Fires," reprinted by the National Agricultural Chemicals Association.)</p> <p>Verify that one copy of the plan approved by the fire department and/or emergency services office having jurisdiction is maintained in the office of the storage facility for inspection by the Board; and that one copy of the plan is filed with the fire department and/or emergency services office having jurisdiction.)</p> <p>Verify that a request is made in writing to the local fire department and/or emergency services office having jurisdiction for no less than an annual inspection</p>

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<p>PM.45.3.NC. Large storage facilities for restricted use pesticides must meet specific additional requirements (2 NCAC 9L.1906) [Added March 1998].</p>	<p>of the facility.</p> <p>Verify that, upon the discovery of any emergency such as a fire, spill, or unintended release of pesticides into the environment from the facility, the secretary of the Board or designated alternate is immediately notified if such emergency poses a hazard or imminent danger to man, animals, aquatic life, or threat of substantial damage to property.</p> <p>(NOTE: Such notification of the secretary does not preclude notification being given to the appropriate local fire department, emergency services office, or other state or federal agencies requiring such notification.)</p> <p>Verify that a current inventory list of the kinds of stored pesticides by brand name and formulation is maintained.</p> <p>(NOTE: An inventory list is considered current if it is updated every 30 days.)</p> <p>Verify that a copy of this list is maintained in a separate location from the storage facility and is made available to the Board or its agents upon request.</p> <p>(NOTE: The following requirements apply to facilities that store 10,000 lbs or more of restricted use pesticides.)</p> <p>Verify that pesticides are not stored within 200 ft of the property line of any schools, hospitals, nursing homes, or other institutional facilities.</p> <p>Verify that a large storage facility has a Board-approved contingency plan (FORM PC-417) for the facility.</p> <p>Verify that the contingency plan is submitted to the Board in sufficient detail so that the Board can determine if the plan is adequate.</p>
<p>PM.45.4.NC. Contingency plans for large storage facilities must meet specific additional requirements (2 NCAC 9L.1907 through 9L.1909, and 9L.1911) [Added March 1998].</p>	<p>Verify that the contingency plan is designed to minimize hazards to human health or the environment from fires, explosions, spills, or any other unplanned sudden or non-sudden release of pesticides or pesticide contaminated materials to air, soil, or surface water.</p> <p>Verify that the provisions of this plan are carried out immediately whenever there is a fire, explosion, spill, or other release of pesticides or pesticide contaminated materials that could threaten human health or the environment.</p> <p>Verify that the contingency plan describes the actions facility personnel must take to respond to fires, explosions, spills, or any other sudden or non-sudden release of pesticides or pesticide contaminated materials to air, soil, or surface water at the facility.</p>

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	<p>Verify that, where appropriate, the plan describes arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services.</p> <p>Verify that the plan lists names, addresses, and phone numbers (office and home) of all persons qualified to act as alternates who can be reached at any time of the day, seven days a week, and who are thoroughly knowledgeable of the facility, including operational and emergency procedures.</p> <p>Verify that, where more than one person is listed, one is named as primary alternate, and others are listed in the order in which they will assume responsibility as alternates.</p> <p>Verify that the plan includes any additional information deemed necessary by the Board and specified on Contingency Plan for Pesticide Storage FORM PC-417.</p> <p>Verify that a copy of the contingency plan and all revisions to the plan are:</p> <ul style="list-style-type: none"> - maintained at the facility - submitted to the North Carolina Pesticide Board in care of the North Carolina Department of Agriculture, Pesticide Section. <p>Verify that the contingency plan is reviewed and immediately amended and resubmitted to the Board, if necessary, whenever:</p> <ul style="list-style-type: none"> - the plan fails in an emergency - the facility changes in its design, construction, operation, or maintenance - the list of alternate changes - the list of emergency equipment changes.

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PM.55.</p> <p>DISPOSAL</p> <p>PM.55.1.NC. The disposal of pesticides and pesticide containers must follow specific criteria (2 NCAC 9L.0602 through 9L.0604).</p>	<p>Verify that, whenever possible, excess pesticides are used according to the labeling for the purpose originally intended.</p> <p>Verify that excess pesticides and pesticide-related wastes are disposed of in accordance with labeling requirements.</p> <p>(NOTE: In addition to these requirements, disposal of excess pesticides and pesticide-related wastes is also subject to rules adopted by the North Carolina Commission for Health Services as set forth in 15A NCAC 13A, Hazardous Waste Management, and 13B, Solid Waste Management, as applicable.)</p> <p>Verify that, prior to disposal, all pesticide containers are thoroughly emptied, using the practices commonly employed to remove materials from that type of container (e.g., shaking, pumping, pouring, triple-rinsing, or draining into the application tank).</p> <p>Verify that pesticide containers are disposed of in accordance with labeling requirements.</p> <p>(NOTE: In addition to these requirements, pesticide container disposal is also subject to rules adopted by the North Carolina Commission for Health Services as set forth in 15A NCAC 13A, Hazardous Waste Management, and 13B, Solid Waste Management, as applicable, and to rules adopted by the North Carolina Environmental Management Commission as set forth in 15A NCAC 2D, Air Pollution Control Requirements.)</p> <p>Verify that no pesticide or pesticide container is disposed of in any of the following ways:</p> <ul style="list-style-type: none"> - in a manner inconsistent with these rules - so as to cause or allow open dumping of pesticides or pesticide containers - so as to cause or allow open burning of pesticides or pesticide containers - so as to cause or allow water dumping, or ocean dumping - so as to violate any applicable provisions of the North Carolina Pesticide Law.

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<p>PM.60.</p> <p>BULK PESTICIDES</p> <p>PM.60.1.NC. The storage of bulk pesticide storage requirements must be met (2 NCAC 9L.1914) [Added March 2010].</p>	<p>Verify that outlets, filler and access ports are locked at all times when not in use.</p> <p>Verify that keys to the outlet, filler and access ports are in the possession of the purchaser and authorized employees only.</p> <p>(NOTE: Locks on ports are not required if bulk tanks are stored inside a facility utilizing security precautions that prevent unauthorized access to the bulk pesticide storage area.)</p> <p>Verify that all bulk pesticide storage tanks display the appropriate signal word as shown on the label on all sides exposed to view.</p> <p>Verify that the words are either stenciled directly on the containers or storage tanks or placed on a sign of durable construction which is firmly attached to the containers and storage tanks.</p> <p>Verify that all letters of said words are a minimum of four inches in height and one inch in width, and are printed in contrasting colors to the containers and storage tanks which are readily visible.</p> <p>Verify that all bulk storage areas are posted with a durable sign stating "PESTICIDE STORAGE," "AUTHORIZED PERSONNEL ONLY," "IN CASE OF EMERGENCY CALL_____"</p> <p>(NOTE: Pesticide applicators utilizing bulk storage containers are subject to the these requirements.)</p>

Appendix 7-1

Subterranean Termite Control for Building After Construction

(Source: 2 NCAC 34.0503(a) and (b)) [Added March 1998; Revised March 2003]

(a) Basement or Crawl-Space Construction:

- (1) Access openings shall be provided to permit inspection of all basement and crawl-space areas of a building and all open porches.
- (2) Clean up and remove all wood debris and cellulose material, such as wood, paper, cloth, etc., contacting soil in all crawl-space areas. This excludes shavings or other cellulose material too small to be raked with the tines of an ordinary garden rake. Remove all visible stumps from all crawl-space areas. Remove all visible form boards in contact with soil.
- (3) Remove all earth that is within 12 inches of the bottom edges of floor joists or within eight inches of the bottom edges of subsills or supporting girders, but not below footings of foundation walls. If foundation footings are less than 12 inches below the bottom edges of joists or subsills or supporting girders, a bank of soil 12 inches to 18 inches wide shall be left adjacent to footings for the purpose of support. Clearance shall be adequate to provide passage of a man to all crawl-space areas of a building.
- (4) All visible termite tubes or tunnels on pillars, pilasters, foundation walls, chimneys, step buttresses, sills, pipes, and other structures below the sill shall be removed.
- (5) Eliminate all wooden parts between the building and soil either outside or inside:
 - (A) No wood of any access opening shall be in contact with the soil.
 - (B) Where wood parts such as door frames, partition walls, posts, stair carriages or other wood parts can be reasonably ascertained to be making direct soil contact through concrete or where there is evidence of termite activity or damage they shall be cut off above the ground or floor level, and the wood removed from the concrete; and the hole shall be filled with concrete or covered with a metal plate, after the point of contact has been treated with a termiticide.
 - (C) Where wood parts such as vertical wood supports or other wood parts under a building or steps outside a building are not resting on solid masonry or concrete bases extending at least two inches above the soil surface or are in direct soil contact and such supports or steps are not removed, the supports and steps shall be cut off and set on a solid masonry or concrete footing extending at least two inches above the ground after the point of contact has been treated with a termiticide.
 - (D) When wood skirting and lattice work are suspended, there shall be at least a two-inch clearance between the top of the soil and the bottom edges of the wood skirting or lattice work. If the two-inch clearance is not acceptable to the property owner, it may be closed with solid masonry or concrete but a minimum clearance of one-fourth of one inch shall be provided between the masonry and wood.
 - (E) Where houses or decks are built on pressure treated wood pilings, pillars or all-weather wood foundations, such pilings, pillars and wood foundation members, including wood step supports, shall not be subject to Rule .0503(a)(5)(A), (B) or (C).
- (6) Drill and treat all voids in multiple masonry foundation and bearing walls and all voids created by their placement. Porch foundation walls shall be drilled to a distance of three ft from the main foundation wall and the point of contact with any wooden members.
 - (A) The distance between drill holes shall not exceed 16 lineal inches and holes shall be no more than 16 inches above the footing or for footings deeper than 16 inches, immediately above the lowest soil level whichever is closest to the footing.
 - (B) The drilling of voids in four inch thick hollow structural block shall not be required under this Rule.
 - (C) Test drill the main foundation wall behind any porch or slab area to determine if the porch or slab is supported by a wall whose placement creates a void between itself and the main foundation wall. If test reveals that a void exist, drill and treat all voids therein as specified in this Rule.
- (7) Drill and treat all voids in all multiple masonry pillars, pilasters, chimneys, and step buttresses, and any void created by their placement:
 - (A) The distance between drill holes shall not exceed 16 lineal inches and shall be no more than 16 inches above the footing or for footings deeper than 16 inches, immediately above the lowest soil level, whichever is closest to the footing.

- (B) Drilling shall not be required if solid concrete masonry footings of pillars, pilasters, chimneys or step buttresses extend eight inches or more above top of soil surface.
- (C) The drilling of voids in four inch thick hollow structural block shall not be required under this Rule.
- (8) Where concrete slabs over dirt-filled areas are at the level of, above the level of, or in contact with, wood foundation members treat dirt-filled areas as follows:
 - (A) Drill vertically three-eighths of one inch or larger holes in the slab, no more than eight inches from the building foundation, at no more than 16 inch intervals and treat soil below slab; or
 - (B) Drill horizontally three-eighths of one inch or larger holes in the foundation wall of the concrete slab, no more than eight inches from the building foundation, every 16 vertical inches starting immediately below the bottom of the slab and rod treat all soil adjacent to building foundation from the bottom of the slab to the lowest outside grade.
- (9) Treat soil adjacent to, but not more than eight inches from, all pillars, pilasters, chimneys, pressure treated wood supports and step buttresses; inside of foundation walls; outside of foundation walls; the outside of foundation walls of concrete slabs over dirt-filled areas and the entire perimeter of a slab foundation wall. Where outside concrete slabs adjacent to the foundation prevent trenching of soil, drill three-eighths of one inch or larger holes, not more than 16 inches apart and within 8 inches of the foundation wall, through slabs or through adjoining foundation wall, and treat soil below slabs. The soil immediately around pipes and other utility conduits making contact with the structure, shall be treated.
- (10) Where stucco on wood or similar type materials extend to or below grade, trench soil to a depth below and under the edge of the stucco or similar type materials and treat soil. After the soil has been treated, a masonry barrier wall may be erected to hold back the soil from making direct contact with the stucco or similar type materials. Where outside slabs on grade adjacent to foundation prevent trenching of soil, drill three-eighths of one inch or larger holes through slabs within eight inches of the foundation wall, or through adjoining foundation wall, not more than 16 inches apart and treat soil below slabs.
- (11) Rule .0503(b) of this Section shall be followed if applicable to basement or crawl-space construction.

(b) The following standards and requirements shall apply to the treatment of a building for subterranean termite control after construction if the building has a slab-on-ground construction:

- (1) Treat soil with a termiticide in, under, and around, all traps and openings in the slab.
- (2) Drill vertically three-eighths inch or larger holes, at all visible or known expansion and construction joints, cracks, and crevices in slab and around all utility conduits in the slab at no more than 16 inch intervals and treat soil below slab. Where wooden structural members are in contact with concrete or masonry floors which have joints or cracks beneath the wooden structural members, including wall plates in utility or storage rooms adjoining the main building, the concrete or masonry shall be drilled and treated in order to achieve treatment of the soil beneath them. As an exception, expansion and construction joints at the perimeter of the exterior wall may be treated by drilling through the foundation wall at no more than 16-inch intervals directly below the bottom of the slab.
- (3) Rule .0503(a) of this Section shall also be followed, where applicable.
- (c) Reapplication of Pesticide(s) to a Structure Previously Treated for Subterranean Termite Control:
 - (1) A reapplication of termiticide shall be required if soil test by the Division reveals that the soil is deficient in the termiticide which was applied to the soil.
 - (2) Any re-application of pesticides under Rule .0503 shall be in accordance with the label of the pesticide used.

SECTION 8

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for POL Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

See WA.5.9.NC. for requirements covering the discharge of a oil to the groundwaters of the State, or in proximity thereto.

Regulations Adopted by Reference

The following regulations from Title 40 Code of Federal Regulations (40 CFR) have been incorporated by reference by North Carolina, including subsequent amendments and editions (15A NCAC 13A.0118):

- 40 CFR 279.1 (Subpart A), Definitions, except that the Definition for Used Oil is defined by General Statutes (GS) 130A-290(b) and is not incorporated by reference (see definition below).
- 40 CFR 279.10 through 279.12 (Subpart B), Applicability.
- 40 CFR 279.20 through 279.24 (Subpart C), Standards for Used Oil Generators.
- 40 CFR 279.30 through 279.32 (Subpart D), Standards for Used Oil Collection Centers and Aggregation Points.
- 40 CFR 279.40 through 279.47 (Subpart E), Standards for Used Oil Transporter and Transfer Facilities.
- 40 CFR 279.50 through 279.59 (Subpart F), Standards for Used Oil Processors and Re-Refiners.
- 40 CFR 279.60 through 279.67 (Subpart G), Standards for Used Oil Burners Who Burn Off-Specification Used Oil for Energy Recovery.
- 40 CFR 279.70 through 279.75 (Subpart H), Standards for Used Oil Fuel Marketers.
- 40 CFR 279.80 through 279.81 (Subpart I), Standards for Use as a Dust Suppressant and Disposal of Used Oil(NOTE: 40 CFR 279.82, which addresses used oil as a dust suppressant, is specifically not incorporated by reference).

Definition

- *Contaminated Soil* - soil containing petroleum products or other soil that has been affected by non-petroleum substances as a result of a release or discharge, but does not include hazardous waste (15A NCAC 2T.1502) [Added March 2007].
- *Dedicated Site* - a site used for the repetitive treatment of soils (15A NCAC 2T.1502) [Added March 2007].
- *Petroleum Contaminated Soil or Soil Containing Petroleum Products* - any soil that has been exposed to petroleum products because of any emission, spillage, leakage, pumping, pouring, emptying, or dumping of petroleum products onto or beneath the land surface and that exhibits characteristics or concentrations of petroleum product constituents in sufficient quantities as to be detectable by compatible laboratory analytical procedures pursuant to 15A NCAC 02H .0800 (15A NCAC 2T.1502) [Added March 2007].
- *Petroleum Product* - all petroleum products as defined by G.S. 143-215.94A and includes motor gasoline, aviation gasoline, gasohol, jet fuels, kerosene, diesel fuel, fuel oils (#1 through #6), and motor oils (new and used) (15A NCAC 2T.1502) [Added March 2007].
- *Recycling* - to prepare used oil for reuse as a petroleum product by rerefining, reclaiming, reprocessing, or other means or to use used oil in a manner that substitutes for a petroleum product made from new oil (North Carolina General Statues (NCGS) 130A-290(b)).

- *Soil Remediation at Conventional Rates* - the treatment of contaminated soils by land application methods, at an evenly distributed thickness not to exceed 6 inches (15A NCAC 2T.1502) [Added March 2007].
- *Soil Remediation at Minimum Rates* - the treatment of contaminated soils by land application methods, at an evenly distributed application thickness not to exceed an average of one inch (15A NCAC 2T.1502) [Added March 2007].
- *Used Oil* - any oil which has been refined from crude oil or synthetic oil and, as a result of use, storage, or handling, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties, but which may be suitable for further use and is economically recyclable (NCGS 130A-290(b)).
- *Used Oil Recycling Facility* - any facility that recycles more than 10,000 gallons of used oil annually (NCGS 130A-290 (b)) [Added March 2009].

PETROLEUM, OIL, AND LUBRICANT (POL) MANAGEMENT GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS	
REFER TO CHECKLIST ITEMS:	
Missing Checklist Items	PO.2.1.NC.
POL Storage	PO.20.1.NC.
Used Oil	PO.60.1.NC.
State-Specific Used Oil Requirements	PO.95.1.NC.
State-Specific POL Requirements	[Deleted]
POL Contaminated Soils	PO.105.1.NC. through PO.105.5.NC.

GUIDANCE FOR APPENDIX USERS	
REFER TO APPENDIX NUMBERS:	REFER TO APPENDIX TITLES:
8-1	Setbacks for Soil Remediation Systems

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PO.2.</p> <p>MISSING CHECKLIST ITEMS</p> <p>PO.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REGULATORY REQUIREMENTS:
<p>PO.20</p> <p>POL STORAGE</p> <p>PO.20.1.NC. Gasoline service stations and dispensing facilities exempt from Title V requirements must meet reporting and recordkeeping standards (15A NCAC 2Q.0802) [Added March 2006; Revised March 2007].</p>	<p>(NOTE: This requirement is repeated in AE.6.8.NC.)</p> <p>(NOTE: This checklist item applies to all gasoline dispensing facilities and gasoline service stations and to delivery vessels delivering gasoline to a gasoline dispensing facility or gasoline service station.)</p> <p>(NOTE: Any gasoline service station or gasoline dispensing facility that has an annual throughput, on a calendar month rolling average basis, of less than 15,000,000 gallons is exempt from the Title V requirements.)</p> <p>Verify that any gasoline service station or gasoline dispensing facility submits a report under the following conditions:</p> <ul style="list-style-type: none"> - annual throughput exceeds 10,000,000 gallons, by the end of the month following the month that throughput exceeds 10,000,000 gallons and every 12 months thereafter - annual throughput exceeds 13,000,000 gallons, by the end of the month

following the month that throughput exceeds 13,000,000 gallons and every 6 months thereafter

- annual throughput exceeds 15,000,000 gallons, by the end of the month following the month that throughput exceeds 15,000,000 gallons.

(NOTE: When the annual throughput exceeds 15,000,000 gallons, a Title V permit application must be submitted.)

Verify that the owner or operator of any exempted gasoline service station or gasoline dispensing facility submits a report containing the following information:

- the name and location of the gasoline service station or gasoline dispensing facility
- the annual throughput of gasoline for each of the 12-month periods ending on each month since the previous report was submitted, including monthly gasoline throughput for each month required to calculate the annual gasoline throughput for each 12-month period
- the signature of the appropriate official as identified in Rule .0304(j) of this Subchapter certifying as to the truth and accuracy of the report.

Verify that the owner or operator of any exempted gasoline service station or gasoline dispensing facility retains records to document annual throughput for all 12-month periods during the previous 3 years.

Verify that the owner or operator reports to the Director any exceedance of an applicability limitation within one week of its occurrence.

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PO.60.</p> <p>USED OIL</p> <p>PO.60.1.NC. Certain facilities must submit an annual report regarding used oil transported, collected, and recycled (15A NCAC 13A.0118(j)) [Revised March 1998].</p>	<p>Verify that, by 1 July of each year, the following facilities submit to the Department an annual report listing the type and quantity of used oil transported, collected, and recycled during the preceding calendar year:</p> <ul style="list-style-type: none"> - facilities transporting more than 500 gal of used oil per week over public highways - collection facilities that annually receive more than 6000 gal of used oil, excluding the volume of used oil collected from individuals that change their own personal motor oil - facilities that annually recycle more than 10,000 gal of used oil - public used oil collection centers. <p>(NOTE: The above reporting requirement does not apply to the following:</p> <ul style="list-style-type: none"> - an electric utility that generates used oil which is reclaimed, recycled, or re-refined on-site for use in its operations - an on-site burner that burns its own on-specification used oil provided that the facility is in compliance with any Air Quality permit requirements established by the Department.)

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PO.95.</p> <p>STATE-SPECIFIC USED OIL REQUIREMENTS</p> <p>PO.95.1.NC. Used oil management must not violate specific criteria (NCGS 130A-309.15) [Citation Revised March 1998].</p>	<p>Verify that used oil is not collected, stored, used, or disposed of in any manner which endangers public health or welfare.</p> <p>Verify that used oil is not discharged into sewers, drainage systems, septic tanks, surface waters, groundwaters, watercourses, or marine waters.</p> <p>Verify that used oil is not disposed of in landfills, unless the disposal has been approved by the Department.</p> <p>Verify that used oil is not mixed with solid waste that is to be disposed of in a landfill.</p> <p>Verify that used oil is not mixed with hazardous substances that make it unsuitable for recycling for recycling or beneficial use.</p> <p>Verify that used oil is not used for road oiling, dust control, weed abatement, or other similar purposes that have the potential to release used oil into the environment.</p>

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
PO.100. STATE-SPECIFIC POL REQUIREMENTS PO.100.1.NC. [Deleted March 2007].	 (NOTE: See PO.105.1.NC. through PO.105.5.NC. for requirements for petroleum contaminated soils.)

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PO.105.</p> <p>POL CONTAMINATED SOILS</p> <p>PO.105.1.NC. Soil remediation systems permitted by regulation must meet specific requirements (15A NCAC 2T.1501 and 2T.1503) [Added March 2007].</p> <p>PO.105.2.NC. Soil remediation systems must be permitted (15A NCAC 2T.1504(a)) [Added March 2007].</p>	<p>(NOTE: This checklist item applies to the disposal or treatment of soils containing petroleum products or other contaminated soil by land application, storage, or containment and treatment. This checklist item does apply to:</p> <ul style="list-style-type: none"> - hazardous waste - soil contaminated with hazardous waste or hazardous waste constituent.) <p>Verify that storage sites for petroleum contaminated soils that are utilized for less than 45 days meet the following criteria:</p> <ul style="list-style-type: none"> - storage is on 10 mil or thicker plastic - provisions are made for containing potential leachate and runoff - setbacks required in Appendix 8-1 are maintained - approval of the activity has been received from the appropriate Regional Supervisor or his designee. <p>Verify that land application sites for petroleum contaminated soils with volumes of soil from each source of less than or equal to 50 cubic yards or for the application of up to 100 cubic yards if the application is at minimum rate meet the following criteria:</p> <ul style="list-style-type: none"> - setbacks required in Appendix 8-1 are maintained - approval of the activity has been received from the appropriate Regional Supervisor or his designee that the site. <p>Verify that land application sites for the disposal of drill cuttings are applied on the site where the drilling occurs and meet the setbacks required in Appendix 8-1.</p> <p>Verify that soils contaminated with non-petroleum substances are determined by chemical analysis to be non-hazardous wastes.</p> <p>(NOTE: This checklist item applies to the disposal or treatment of soils containing petroleum products or other contaminated soil by land application, storage, or containment and treatment. This checklist item does apply to:</p> <ul style="list-style-type: none"> - hazardous waste - soil contaminated with hazardous waste or hazardous waste constituent.) <p>Verify that soil remediation systems obtain a permit.</p> <p>(NOTE: The following information is required for a permit application:</p> <ul style="list-style-type: none"> - a complete chemical analysis of the contaminated soil to be remediated, including total petroleum hydrocarbons (TPH), semivolatile and volatile

COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>PO.105.3.NC. Facilities treating and disposing of soil containing petroleum products must meet specific operating and design standards (15A NCAC 2T.1505(a), (b), and (c)) [Added March 2007].</p>	<p>organics, pH, and heavy metals</p> <ul style="list-style-type: none"> - a determination of hazardous waste constituents using the Toxicity Characteristic Leaching Procedure (TCLP) - site map - confirmation that an erosion control plan has been submitted to the Division of Land Quality or its designee, for disposal sites encompassing more than one acre - the volume of contaminated soil to be remediated - a landowner agreement to allow the use of the property for the purpose of remediating contaminated soil.) <p>Verify that, for soil remediation at minimum rates, contaminated soils are incorporated into native soils of the receiver site immediately upon application.</p> <p>Verify that subsequent application of petroleum contaminated soils onto the same receiver site do not occur for at least 18 months from the date of the most recent application of petroleum contaminated soils.</p> <p>Verify that, for soil remediation at conventional rates, native and contaminated soils are fertilized, limed, and aerated as approved by the Division.</p> <p>(NOTE: Application thickness is based on the nature of receiver site soils, depth to seasonal high water table, intended cover crop, and the source of contamination, in accordance with procedures approved by the Division.)</p> <p>Verify that operation of the landfarming program does not result in contravention of classified groundwater or surface water quality standards.</p> <p>Verify that subsequent application of petroleum-contaminated soils onto the same receiver site does not occur for at least 18 mo from the date of the most recent application.</p> <p>Verify that subsequent applications of petroleum contaminated soils at dedicated sites do not recur until it can be demonstrated that additional applications of contaminated soils will not result in the contravention of any groundwater or surface water standards.</p> <p>(NOTE: Subsequent applications cause the receiver site to be reclassified as a dedicated remediation site, unless the installation/CW facility can demonstrate, through soil sampling and contaminant analytical procedures approved by the Department, that the petroleum contaminant level in the upper 8 in. of receiver site soils is below analytical detection levels.)</p>
<p>PO.105.4.NC. Containment structures for contaminated soil must meet specific requirements (15A NCAC</p>	<p>Verify that a containment structure designed to bioremediate or volatilize soil containing petroleum products is constructed of either:</p> <ul style="list-style-type: none"> - a synthetic liner of at least 30 mils thickness

<p align="center">COMPLIANCE CATEGORY: PETROLEUM, OIL, AND LUBRICANT MANAGEMENT North Carolina Supplement</p>	
<p>REGULATORY REQUIREMENTS:</p>	<p>REVIEWER CHECKS: March 2010</p>
<p>2T.1505(d)) [Added March 2007].</p>	<p>- a 1 ft thick liner of natural material, compacted to at least 95 percent standard proctor dry density and with a permeability of less than 1×10^{-7} cm/sec.</p> <p>Verify that the bottom of the containment structure is at least 3 ft above the seasonal high water table or bedrock.</p> <p>Verify that a leachate collection system is installed to prevent runoff from petroleum-contaminated soils within the containment structure, or steps are taken to avoid accumulation of stormwater within the containment structure.</p> <p>Verify that the containment structure is compatible with the chemical and physical properties of the contaminants involved.</p>
<p>PO.105.5.NC. Remediation systems for contaminated soils must meet setback requirements (15A NCAC 2T.1506) [Added March 2007; Revised March 2008].</p>	<p>Verify that remediation systems for petroleum contaminated soils meet the minimum horizontal distance requirements listed in Appendix 8-1.</p>

Appendix 8-1

Setbacks for Soil Remediation Systems

(15A NCAC 2T.1506) [Added March 2007; Revised March 2008]

Remediation systems shall adhere to the following setbacks and greater where necessary to comply with minimum horizontal distance requirements set by the Division:

	Feet
Any habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site	100
Any well with the exception of a Division approved groundwater monitoring well	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	100
Surface water diversions (ephemeral streams, waterways ditches)	25
Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	25
Subsurface groundwater lowering drainage systems	25
Any building foundation except treatment facilities	15
Any basement	15
Any property line	50
Any water line	10
Any swimming pool	100
Rock outcrops	25
Public right-of-way	50

SECTION 9

SOLID WASTE MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Solid Waste Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Agricultural Waste* - waste materials produced from the raising of plants and animals, including animal manures, bedding, plant stalks, hulls, and vegetable matter (Title 15A, North Carolina Administrative Code, Subchapter 13B, Section .0101 (15A NCAC 13B.0101)).
- *Airport* - public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities (15A NCAC 13B.0101).
- *Aquifer* - a geological formation, group of formations, or portion of a formation capable of yielding significant quantities of ground water to wells or springs (15A NCAC 13B.1602).
- *Areas Susceptible to Mass Movement* - those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the MSWLF unit, because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluction, block sliding, and rock fall (15A NCAC 13B.1622).
- *Backyard Composting* - the onsite composting of yard waste from residential property by the owner or tenant for non commercial use (15A NCAC 13B.0101).
- *Base Liner System* - the liner system installed on the MSWLF unit's foundation to control the flow of leachate (15A NCAC 13B.1602).
- *Bird Hazard* - an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants (15A NCAC 13B.1622).
- *Blood and Body Fluids* - liquid blood, serum, plasma, other blood products, emulsified human tissue, spinal fluids, and pleural and peritoneal fluids. Dialysates are not blood or body fluids under this definition (15A NCAC 13B.1201).
- *Cap System* - a liner system installed over the MSWLF unit to minimize infiltration of precipitation and contain the wastes (15A NCAC 13B.1602).
- *Cell* - compacted solid waste completely enveloped by a compacted cover material (15A NCAC 13B.0101).
- *Compost* - decomposed, humus-like organic matter, free from pathogens, offensive odors, toxins/ or materials harmful at the point of end use. Compost is suitable for use as a soil conditioner with varying nutrient values (15A NCAC 13B.0101).
- *Compost Facility* - a solid waste facility which utilizes a controlled biological process of degrading non-hazardous solid waste. A facility may include materials processing and hauling equipment; structures to control

drainage; and structures to collect and treat leachate; and storage areas for the incoming waste, the final products, and residual materials (15A NCAC 13B.0101).

- *Composting* - the controlled decomposition of organic waste by naturally occurring bacteria, yielding a stable, humus-like, pathogen-free final product resulting in volume reduction of 30 to 75 percent (15A NCAC 13B.0101).
- *Composting Pad* - a surface, whether soil or manufactured, where the process of composting takes place, and where raw and finished materials are stored (15A NCAC 13B.0101) [Added March 2009].
- *Curing* - the final state of composting, after the majority of the readily metabolized material has been decomposed, in which the compost material stabilizes and dries (15A NCAC 13B.0101) [Added March 2009].
- *Demolition Landfill* - a sanitary landfill that is limited to receiving stumps, limbs, leaves, concrete, brick, wood, uncontaminated earth, or other solid wastes as approved by the Division which either ceased operation or was converted to a Land Clearing and Inert Debris Landfill pursuant to Rule .0563 (15A NCAC 13B.0101) [Revised March 2009].
- *Disease Vectors* - any rodents, flies, mosquitoes, or other animals, including insects, capable of transmitting disease to humans (15A NCAC 13B.1626).
- *Displacement* - the relative movement of any two sides of a fault measured in any direction (15A NCAC 13B.1622).
- *Division* - the Director of the Division of Solid Waste Management or the Director's authorized representative (15A NCAC 13B.0101).
- *Erosion Control Measure, Structure, or Device* - physical devices constructed, and management practices utilized, to control sedimentation and soil erosion such as silt fences, sediment basins, check dams, channels, swales, energy dissipation pads, seeding, mulching, and other similar items (15A NCAC 13B.0101).
- *Existing MSWLF Unit* - any municipal solid waste landfill unit that is receiving solid waste as of October 9, 1993, and is not a new MSWLF unit. Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management (15A NCAC 13B.1602).
- *Explosive Gas* - Methane (CH₄) (15A NCAC 13B.0101).
- *Fault* - a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side (15A NCAC 13B.1622).
- *Floodplain* - the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, which are inundated by the 100-yr flood (15A NCAC 13B.0101).
- *Foreign Matter* - metals, glass, plastics, rubber, bones, and leather, but does not include sand, grit, rocks or other similar materials (15A NCAC 13B.0101) [Added March 2009].
- *Garbage* - all putrescible wastes, including animal offal and carcasses, and recognizable industrial by-products, but excluding sewage and human waste (NCGS) 130A-209(a)) [Added March 2007; Revised March 2009].
- *Gas Condensate* - the liquid generated as a result of gas recovery processes at the MSWLF unit (15A NCAC 13B.1626).
- *Groundwater* - water below the land surface in a zone of saturation (15A NCAC 13B.1602).

- *Hazardous Waste* - a solid waste as defined in GS 130A - 290 (a) (8). Hazardous waste does not include those solid wastes excluded from regulation pursuant to 40 CFR 261.4, incorporated by reference in 15A NCAC 13A.0006, nor those generated by conditionally exempt small quantity generators as defined in 40 CFR 261.5, incorporated by reference in 15A NCAC 13A.0006 (15A NCAC 13B.1602).
- *Holocene* - the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present (15A NCAC 13B.1622).
- *Household Waste* - any solid waste derived from households including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas (15A NCAC 13B.1602).
- *Incineration* - the process of burning solid, semisolid or gaseous combustible wastes to an inoffensive gas and a residue containing little or no combustible material (15A NCAC 13B.0101).
- *Industrial Process Waste* - any solid, semisolid, or liquid waste generated by a manufacturing or processing plant which is a result of the manufacturing or processing process. This definition does not include packaging materials associated with such activities (15A NCAC 13B.0101).
- *Industrial Solid Waste* - solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/byproducts; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste (15A NCAC 13B.1602).
- *Industrial Solid Waste Landfill* - a facility for the land disposal of industrial solid waste as defined in Item (11) of Rule.1602 of this Subchapter, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257 (15A NCAC 13B.0101).
- *Karst Terranes* - areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terranes include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys (15A NCAC 13B.1622).
- *Land Clearing and Inert Debris Landfill* - a facility for the land disposal of land clearing waste, concrete, brick, concrete block, uncontaminated soil, gravel and rock, untreated and unpainted wood, and yard trash (15A NCAC 13B.0101).
- *Land Clearing Waste* - solid waste which is generated solely from land clearing activities such as stumps, trees, limbs, brush, grass, and other naturally occurring vegetative material (15A NCAC 13B.0101).
- *Landfill Facility* - all contiguous land and structures, other appurtenances, and improvements on the land within the legal description of the site included in or proposed for the Solid Waste Permit. Existing facilities are those facilities which were permitted by the Division prior to October 9, 1993. Facilities permitted on or after October 9, 1993 are new facilities (15A NCAC 13B.1602).
- *Landfill Unit* - a discrete area of land or an excavation that receives solid waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257. Such a landfill may be publicly or privately owned (15A NCAC 13B.1602).
- *Lateral Expansion* - a horizontal expansion of the waste boundaries of an existing MSWLF unit (15A NCAC 13B.1602).

- *Leachate* - any liquid, including any suspended components in liquid, that has percolated through or drained from solid waste (15A NCAC 13B.0101).
- *Liner System* - an engineered environmental control system which can incorporate filters, drainage layers, compacted soil liners, geomembrane liners, piping systems, and connected structures (15A NCAC 13B.1602).
- *Liquid Waste* - any waste material that is determined to contain free liquids as defined by Method 9095 (Paint Filter Liquids Test), S.W. 846 (15A NCAC 13B.1626).
- *Lithified Earth Material* - all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include manmade materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface (15A NCAC 13B.1622).
- *Lower Explosive Limit (LEL)* - the lowest percent by volume of a mixture of explosive gases which will propagate a flame in air at 25 °C and atmospheric pressure (15A NCAC 13B.0101).
- *Maximum Horizontal Acceleration in Lithified Earth Material* - the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90 percent or greater probability that the acceleration will not be exceeded in 250 yr, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment (15A NCAC 13B.1622).
- *Medical Waste* - any solid waste which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals, but does not include any hazardous waste identified or listed pursuant to this Article, radioactive waste, household waste as defined in 40 Code of Federal Regulations § 261.4(b)(1) in effect on 1 July 1989, or those substances excluded from the definition of "solid waste" in this section (NCGS 130A-209(a) and 15A NCAC 13B.1201) [Revised March 2007].
- *Microbiological Waste* - cultures and stocks of infectious agents, including but not limited to, specimens from medical, pathological, pharmaceutical, research, commercial, and industrial laboratories (15A NCAC 13B.1201).
- *Microwave Treatment* - treatment by microwave energy for sufficient time to render waste non-infectious (15A NCAC 13B.1201).
- *Mulch* - a protective covering of various substances, especially organic, to which no plant food has been added and for which no plant food is claimed. Mulch is generally placed around plants to prevent erosion, compaction, evaporation of moisture, freezing of roots, and weed growth (15A NCAC 13B.0101).
- *Municipal Solid Waste* - any solid waste resulting from the operation of residential, commercial, industrial, governmental, or institutional establishments that would normally be collected, processed, and disposed of through a public or private solid waste management service. Municipal solid waste does not include hazardous waste, sludge, industrial waste managed in a solid waste management facility owned and operated by the generator of the industrial waste for management of that waste, or solid waste from mining or agricultural operations (NCGS 130A-209(a)) [Added March 2007].
- *Municipal Solid Waste Landfill (MSWLF) Unit* - a discrete area of land or an excavation that receives household waste, and is not a land application unit, surface impoundment, injection well, or waste pile, as defined under 40 CFR Part 257. Such a landfill may be publicly or privately owned. A MSWLF unit may also be permitted to receive other types of non hazardous solid waste. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion (15A NCAC 13B.1602).

- *New MSWLF Unit* - any municipal solid waste landfill unit that has not received waste prior to October 9, 1993 (15A NCAC 13B.1602).
- *Offsite* - any site which is not "onsite" (15A NCAC 13B.1201).
- *One-Hundred Year Flood* - a flood that has a 1 percent or less chance of recurring in any year or a flood of a magnitude equaled or exceeded once in 100 yr on the average over a significantly long period (15A NCAC 13B.0101).
- *Onsite* - the same or geographically contiguous property, which may be divided by public or private right-of-way (15A NCAC 13B.1201).
- *Open Burning* - the combustion of solid waste without all of the following (15A NCAC 13B.1602):
 1. control of combustion air to maintain adequate temperature for efficient combustion
 2. containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion
 3. control of the emission of the combustion products.
- *Pathogens* - organisms that are capable of producing infection or diseases, often found in waste materials (15A NCAC 13B.0101).
- *Pathological Wastes* - human tissues, organs and body parts; and the carcasses and body parts of all animals that were known to have been exposed to pathogens that are potentially dangerous to humans during research, were used in the production of biologicals or in vivo testing of pharmaceuticals, or that died with a known or suspected disease transmissible to humans (15A NCAC 13B.1201).
- *Place of Public Assembly* - any fairground, auditorium, stadium, church, campground, theater, school, or any other place where people gather or congregate (15A NCAC 13B.0816).
- *Project Engineer* - the official representative of the permittee who is licensed to practice engineering in the State of North Carolina, who is responsible for observing, documenting, and certifying that activities related to the quality assurance of the construction of the solid waste management facility conforms to the Division approved plan, the permit to construct and the Rules specified in this Section. All certifications must bear the seal and signature of the professional engineer and the date of certification (15A NCAC 13B.1602).
- *Putrescible* - solid waste capable of being decomposed by microorganisms with sufficient rapidity as to cause nuisances from odors and gases, such as kitchen wastes, offal and carcasses (15A NCAC 13B.0101).
- *Radioactive Waste Material* - any waste containing radioactive material as defined in GS 104E- 5(14) (15A NCAC 13B.0101).
- *Regulated Medical Waste* - blood and body fluids in individual containers in volumes greater than 20 ml, microbiological waste, and pathological waste that have not been treated pursuant to 15A NCAC 13B.1207 (15A NCAC 13B.0101).
- *Residence* - any habitable home, hotel, motel, summer camp, labor work camp, mobile home, dwelling unit in a multiple-family structure, or any other place where people reside (15A NCAC 13B.0816).
- *Resource Recovering Facility* - a building, or buildings, or parts thereof, and includes any equipment exclusively and integrally used therein for obtaining material or energy resources from solid waste. The facility also includes land occupied by the buildings and equipment. Facilities used to collect, sort, or otherwise prepare solid waste for reuse or recycling are resource recovering facilities (15A NCAC 13B.1501).
- *Rock* - the consolidated or partially consolidated mineral matter or aggregate, including bedrock or weathered rock, not exhibiting the properties of soil (15A NCAC 13B.0816).

- *Runoff* - the portion of precipitation that drains from an area as surface flow (15A NCAC 13B.0101).
- *Runon* - any rainwater that drains over land onto any part of a facility (15A NCAC 13B.1602).
- *Sediment* - solid particulate matter both mineral and organic, that has been or is being transported by water, air, gravity, or ice from its site of origin (15A NCAC 13B.0101).
- *Seismic Impact Zone* - an area with a 10 percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 250 yr (15A NCAC 13B.1622).
- *Septage* - septage as defined in GS 130A- 290(a) (32) and also includes washings from the interior of septage-handling containers, including pumper trucks (15A NCAC 13B.0816).
- *Septage* - solid waste that is a fluid mixture of untreated and partially treated sewage solids, liquids, and sludge of human or domestic origin which is removed from a wastewater system. The term septage includes the following (NCGS 130A-209(a)) [Added March 2007]:
 1. Domestic septage, which is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works receiving only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works receiving either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.
 2. Domestic treatment plant septage, which is solid, semisolid, or liquid residue generated during the treatment of domestic sewage in a treatment works where the designed disposal is subsurface. Domestic treatment plant septage includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a material derived from domestic treatment plant septage. Domestic treatment plant septage does not include ash generated during the firing of domestic treatment plant septage in an incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.
 3. Grease septage, which is material pumped from grease interceptors, separators, traps, or other appurtenances used for the purpose of removing cooking oils, fats, grease, and food debris from the waste flow generated from food handling, preparation, and cleanup.
 4. Industrial or commercial septage, which is material pumped from septic tanks or other devices used in the collection, pretreatment, or treatment of any water-carried waste resulting from any process of industry, manufacture, trade, or business where the design disposal of the wastewater is subsurface. Domestic septage mixed with any industrial or commercial septage is considered industrial or commercial septage.
 5. Industrial or commercial treatment plant septage, which is solid, semisolid, or liquid residue generated during the treatment of sewage that contains any waste resulting from any process of industry, manufacture, trade, or business in a treatment works where the designed disposal is subsurface. Industrial or commercial treatment plant septage includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a material derived from domestic treatment plant septage. Industrial or commercial treatment plant septage does not include ash generated during the firing of industrial or commercial treatment plant septage in an incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.
- *Septage Management Facility* - land, personnel, and equipment used in the management of septage, including but not limited to, land application sites (15A NCAC 13B.0816).
- *Sharps* - needles, syringes with attached needles, capillary tubes, slides and cover slips, and scalpel blades (15A NCAC 13B.1201).
- *Siltation* - sediment resulting from accelerated erosion that is settleable or removable by properly designed, constructed, and maintained control measures and which has been transported from its point of origin within the site land-disturbing activity and which has been deposited, or is in suspension in water (15A NCAC 13B.0101).

- *Silviculture Waste* - waste materials produced from the care and cultivation of forest trees, including bark and woodchips (15A NCAC 13B.0101).
- *Sludge* - any solid, semisolid or liquid waste generated from a municipal, commercial, institutional or industrial wastewater treatment plant, water supply treatment plant or air pollution control facility, or any other waste having similar characteristics and effects (NCGS 130A-290(a)) [Added March 2007; Citation Revised March 2008].
- *Soil* - the unconsolidated mineral and organic material of the land surface. It consists of sand, silt, and clay minerals and variable amounts of organic materials (15A NCAC 13B.0816).
- *Solid Waste Collector* - any person who collects or transports solid waste by whatever means, including but not limited to, highway, rail, and navigable waterway (15A NCAC 13B.0101).
- *Solid Waste Generator* - any person who produces solid waste (15A NCAC 13B.0101).
- *Special Wastes* - solid wastes that can require special handling and management, including white goods, whole tires, used oil, lead-acid batteries, and medical wastes (NCGS 130A-290a) [Added March 2007; Citation Revised March 2008].
- *Spoiled Food* - any food which has been removed from sale by the United States Department of Agriculture, North Carolina Department of Agriculture, Food and Drug Administration, or any other regulatory agency having jurisdiction in determining that food is unfit for consumption (15A NCAC 13B.0101).
- *Steam Sterilization* - treatment by steam at high temperatures for sufficient time to render infectious waste noninfectious (15A NCAC 13B.0101).
- *Structural Components* - liners, leachate collection systems, final covers, runoff or runoff systems, and any other component used in the construction and operation of the MSWLF that is necessary for protection of human health and the environment (15A NCAC 13B.1622).
- *Transfer Facility* - a permanent structure with mechanical equipment used for the collection or compaction of solid waste prior to the transportation of solid waste for final disposal (15A NCAC 13B.0101).
- *Treatment* - as defined in GS 130A-309.26(a) (2) (15A NCAC 13B.1201).
- *Treatment and Processing Facility* - a facility used in the treatment and processing of putrescible solid waste for final disposal or for utilization by reclaiming or recycling (15A NCAC 13B.0101).
- *Treatment and Processing Waste* - waste that is a residual solid from a wastewater treatment or pretreatment facility (15A NCAC 13B.0101).
- *Treatment of Septage* - the preparation of septage for final use or disposal. Treatment includes, but is not limited to, thickening, stabilization, and dewatering of septage. Treatment does not include storage of septage (15A NCAC 13B.0816).
- *Unstable Area* - a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terranes (15A NCAC 13B.1622).
- *Uppermost Aquifer* - the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary (15A NCAC 13B.1602).

- *Vector* - a carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another (15A NCAC 13B.0101).
- *Washout* - the carrying away of solid waste by waters of the base flood (15A NCAC 13B.1622).
- *Waste Management Unit Boundary* - a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer (15A NCAC 13B.1602).
- *Water Supply Watershed* - an area from which water drains to a point or impoundment, and the water is then used as a source for a public water supply (15A NCAC 13B.0101).
- *Water Table* - the upper limit of the portion of the ground wholly saturated with water (15A NCAC 13B.0101).
- *Wetlands* - those areas that are defined in 40 CFR 232.2(r) (15A NCAC 13B.1622).
- *White Goods* - includes refrigerators, ranges, water heaters, freezers, unit air conditioners, washing machines, dishwashers, clothes dryers, and other similar domestic and commercial large appliances (NCGS 130A-290(a)) [Added March 2007; Citation Revised March 2008].
- *Windrow* - an elongated compost pile (typically 8 ft wide by 10 ft high) (15A NCAC 13B.0101).
- *Yard Trash* - solid waste consisting solely of vegetative matter resulting from landscaping maintenance (NCGS 130A-290(a)) [Added March 2007; Citation Revised March 2008].
- *Yard Waste* - "Yard Trash" and "Land-clearing Debris" as defined in G.S. 130A-290, including stumps, limbs, leaves, grass, and untreated wood (15A NCAC 13B.0101) [Revised March 2009].
- *Working Face* - that portion of the land disposal site where solid wastes are discharged, spread, and compacted prior to the placement of cover material (15A NCAC 13B.0101).

**SOLID WASTE MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	SO.2.1.NC.
State-Specific Requirements	
General	SO.5.1.NC. through SO.5.3.NC.
Permits/Notifications/Exemptions	SO.6.1.NC.
Storage/Collection of Solid Waste	SO.10.1.NC.
Transfer Facilities	SO.15.1.NC.
Transportation	SO.20.1.NC.
Municipal Solid Waste Landfills	
Permits	SO.50.1.NC.
Design Criteria	SO.60.1.NC. through SO.60.6.NC.
Operating Criteria	SO.65.1.NC. through SO.65.9.NC.
Emissions	SO.67.1.NC through SO.67.4.NC.
Groundwater Monitoring Criteria	SO.70.1.NC. through SO.70.6.NC.
[NOTE: Groundwater Monitoring Criteria was erroneously placed in section SO.67, and has been moved <i>into</i> SO.70.]	
Closure Criteria	SO.75.1.NC. through SO.75.3.NC.
Post-Closure Care Requirements	SO.80.1.NC.
Documentation	SO.85.1.NC. and SO.85.2.NC.
Medical Waste	
Generators	SO.105.1.NC.
Containers/Labeling/Storage Areas	SO.110.1.NC. and SO.110.2.NC.
Transportation	SO.115.1.NC. and SO.115.2.NC.
Treatment/Disposal	SO.120.1.NC. through SO.120.5.NC.
Documentation	SO.125.1.NC. through SO.125.5.NC.
Landfills	SO.135.1.NC. through SO.135.9.NC.
Inert Waste Landfills	SO.140.1.NC. through SO.140.24.NC.
Incinerators	SO.145.1.NC. and SO.145.2.NC.
Waste Tire Management	SO.160.1.NC. through SO.160.8.NC.
Yard Waste/Composting	SO.165.1.NC. through SO.165.16.NC.
Other Treatment/Processing Units	SO.175.1.NC.

GUIDANCE FOR APPENDIX USERS

REFER TO APPENDIX NUMBERS:

REFER TO APPENDIX TITLES:

9-1	Classification and Distribution of Solid Waste Compost Products
9-2	Test Parameters for Type 2, 3 and 4 Municipal Solid Waste Compost Facilities

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>SO.2.</p> <p>MISSING CHECKLIST ITEMS</p> <p>SO.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
STATE-SPECIFIC REQUIREMENTS SO.5. General SO.5.1.NC. Solid waste management must meet specific conditions (15A NCAC 13B.0103 (a), (b), and (e) through (g)). SO.5.2.NC. Solid waste generators are responsible for solid waste storage, collection, and disposal (15A NCAC 13B.0106). SO.5.3.NC. Open dump sites used for solid waste disposal must be closed (15A NCAC 13B.0502) [Revised March 2007; Revised March 2008; Revised March 2009].	<p>Verify that solid waste is stored, collected, transported, separated, processed, recycled, recovered, and disposed of according to the Division of solid Waste Management rules.</p> <p>Verify that no radioactive waste is collected, transported, stored, treated, processed, disposed of, or reclaimed unless authorized by a radioactive material license issued by the Division of Radiation Protection.</p> <p>Verify that solid waste is not disposed of in or on waters that results in solid waste entering waters or being deposited upon lands of the state.</p> <p>Verify that white goods are not disposed of at a solid waste disposal site.</p> <p>Verify that all solid waste facilities owned and operated by or on behalf of a local government install scales and weigh all solid waste when it is received.</p> <p>(NOTE: A solid waste generator is responsible for the storage, collection, and disposal of the solid waste.)</p> <p>Verify that a solid waste generator ensures that the waste is disposed of at a site or facility, which is permitted to receive the waste.</p> <p>Verify that an open dump for the disposal of solid waste are closed in accordance with the following requirements:</p> <ul style="list-style-type: none"> - effective vector control is implemented, including baiting for at least 2 wk after closing, to prevent vector migration to adjacent properties - if the site is deemed suitable by the Division, existing solid waste is compacted and covered in place with 1 ft or more of suitable compacted earth; a condition of closing the site by compacting and covering the waste in place is recordation of the disposal location with the Register of Deeds in the county where the site is located - if the site is deemed unsuitable by the Division, solid waste is removed and placed in an approved disposal site or facility - erosion control measures are implemented by grading and seeding - unauthorized entry to the site is prevented by means of gates, chains, berms, fences, and other security measures approved by the Division and posting of signs indicating closure for a period designated by the Division not to exceed

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	1 yr.

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>STATE-SPECIFIC REQUIREMENTS</p> <p>SO.6 Permits/ Notifications/ Exemptions</p> <p>SO.6.1.NC. A solid waste management facility must have a permit issued by the Division and meet permit conditions (15A NCAC 13B.0201 and 13B.0204) [Revised March 2009].</p>	<p>Verify that the treatment, processing, storage or disposal of solid waste is at a solid waste management facility permitted by the Division for such activity.</p> <p>Verify that solid waste management facility is not established, operated, maintained, constructed, expanded or modified without an appropriate and currently valid permit issued by the Division.</p> <p>(NOTE: The solid waste management facility permit, except for land clearing and inert debris permits, shall have two parts, as follows:</p> <ul style="list-style-type: none"> - a permit to construct a solid waste management facility is issued by the Division after site and construction plans have been approved and it has been determined that the facility can be operated in accordance with Article 9 of Chapter 130A and the applicable rules set forth in this Subchapter, and other applicable state, federal and local laws. An applicant shall not clear or grade land or commence construction for a solid waste management facility until a construction permit has been issued - a permit to operate a solid waste management facility may not be issued unless it has been determined that the facility has been constructed in accordance with the construction permit, that any pre-operative conditions of the construction permit have been met, and that the construction permit has been recorded, if applicable.) <p>(NOTE: Land clearing and inert debris facilities may be issued a combined permit to construct and operate the facility. Land clearing and inert debris facilities subject to Rule .0563 Item (1) may construct and operate after notification as provided for under Rule .0563 Item (2) (see SO.140.2.NC.).)</p> <p>Verify that all solid waste management facilities are operated in conformity with applicable requirements and in such a manner as to prevent the creation of a nuisance, unsanitary conditions, or potential public health hazard.</p> <p>Verify that the owner of a facility granted a permit for a sanitary landfill or a facility for the disposal of hazardous waste on land files the certified copy of the permit in the register of deeds' office in the county or counties in which the land is located.</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>SO.10.</p> <p>STORAGE/ COLLECTION OF SOLID WASTE</p> <p>SO.10.1.NC. The storage of solid waste must meet specific requirements (15A NCAC 13B.0104) [Revised March 1998].</p>	<p>Verify that garbage is stored in either durable rust-resistant, non absorbent, water-tight, rodent proof, and easily cleanable containers with a close fitting, fly-tight cover, when applicable, or other types of containers acceptable to the local governing agency and conforming to this section.</p> <p>Verify that refuse is stored in durable containers or other types of containers acceptable to the local governing agency and conforming to this section.</p> <p>Verify that, when garbage is stored in combination with refuse, containers meet the requirements for garbage containers.</p> <p>Verify that all containers for the storage of solid waste are maintained in such a manner as to prevent the creation of a nuisance or unsanitary conditions.</p> <p>Verify that containers, broken or otherwise failing to meet these requirements, are replaced with acceptable containers.</p> <p>Verify that refuse too large or otherwise not suitable for storage in containers are stored in a nuisance free manner consistent with requirements of the local government.</p> <p>Verify that all solid waste is stored in such a manner as to prevent the creation of a nuisance, unsanitary conditions, or a potential public health hazard.</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>SO.15.</p> <p>TRANSFER FACILITIES</p> <p>SO.15.1.NC. Transfer facilities must meet specific operating requirements (15A NCAC 13B.0402) [Revised March 1998].</p>	<p>Verify that transfer facility operational plans are approved and followed as specified.</p> <p>Verify that the transfer facility only accepts those wastes, which it is permitted to receive.</p> <p>Verify that water coming into contact with solid waste is contained onsite or properly treated prior to discharge.</p> <p>Verify that the transfer facility has fire control equipment available.</p> <p>Verify that effective vector control measures are applied to control flies, rodents, and other insects, or vermin.</p> <p>Verify that equipment is provided in storage and charging areas and elsewhere as needed or as may be required in order to maintain sanitary conditions.</p> <p>Verify that the appropriate method is provided to confine material subject to blowing.</p> <p>Verify that at the conclusion of each day of operation, all windblown material resulting from the operation is collected and returned to the area.</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>SO.20.</p> <p>TRANSPORTATION</p> <p>SO.20.1.NC. The collection and transportation of solid waste must meet specific requirements (15A NCAC 13B.0105) [Revised March 1998].</p>	<p>(NOTE: The solid waste collector is responsible for the collection and transportation of all solid waste collected to a permitted disposal site or facility.)</p> <p>Verify that the solid waste collector transports to a site or facility only those solid wastes which the site or facility is permitted to receive.</p> <p>Verify that vehicles or containers used for collection and transportation of garbage or refuse containing garbage are covered, leakproof, durable, and of easily cleanable construction.</p> <p>Verify that vehicles or containers are cleaned as often as necessary to prevent a nuisance or insect breeding and are maintained in good repair.</p> <p>Verify that vehicles or containers used for collection and transportation of any solid waste are loaded and moved in such a manner that the contents will not fall, leak, or spill and are covered when necessary to keep contents dry and to prevent blowing of material.</p> <p>Verify that, if spillage occurs, the material is picked up immediately by the solid waste collector and returned to the vehicle or container and the area is properly cleaned.</p>

COMPLIANCE CATEGORY: SOLID WASTE MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>MUNICIPAL SOLID WASTE LANDFILLS</p> <p>SO.50. Permits</p> <p>SO.50.1.NC. A municipal solid waste landfill facility (MSWLF) must have a permit to construct and a permit to operate (15A NCAC 13B.1617) [Revised March 1998].</p>	<p>Verify that new MSWLFs have a construction permit.</p> <p>Verify that the MSWLF has an operating permit.</p> <p>Verify that all permit conditions are met.</p> <p>(NOTE: The permit incorporates the following Division approved plans:</p> <ul style="list-style-type: none"> - facility plan - engineering - construction quality assurance plan - operation plan - closure and postclosure plan - monitoring plan.)

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
MUNICIPAL SOLID WASTE LANDFILLS SO.60. Design Criteria SO.60.1.NC. New MSWLFs must meet design requirements (15A NCAC 13B.1624 (b) (1), (2), (11) and (15)) [Citation Revised February 1999]. SO.60.2.NC. A MSWLF unit must meet buffer requirements (15A NCAC 13B.1624 (b) (3) and (4)) [Revised February 1999]. SO.60.3.NC. MSWLFs must meet landfill subgrade requirements (15A NCAC 13B.1624 (b) (7)).	<p>Verify that a base liner system is constructed on the landfill subgrade and is designed to efficiently contain, collect, and remove leachate generated by the MSWLF unit.</p> <p>Verify that the leachate collection system (LCS) has a leachate collection pipe network hydraulically designed to convey leachate from the MSWLF unit to an appropriately sized leachate storage or treatment facility or to a point of offsite transport.</p> <p>Verify that adequate structures and measures are designed and maintained to manage runoff generated by the 24-h, 25-yr storm event, and conform to the requirements of the <i>Sedimentation Pollution Control Law</i> (15A NCAC 4).</p> <p>Verify that new MSWLF units and lateral expansions to existing units meet the following buffer requirements:</p> <ul style="list-style-type: none"> - a minimum 300-ft buffer between the MSWLF unit and all property lines - a minimum 500-ft buffer between the MSWLF unit and existing private residences and wells - a minimum 50-ft buffer between the MSWLF unit and any stream, river, or lake, unless the owner or operator can demonstrate to the Division both of the following: <ul style="list-style-type: none"> - alternative management of water and any discharge will adequately protect public health and the environment - construction activities conform to the requirements of Sections 404 and 401 of the <i>Clean Water Act</i> - an adequate buffer distance to establish a groundwater monitoring system - as required in the effective permit. <p>Verify that a MSWLF unit is constructed so that the post settlement bottom elevation of the base liner system is a minimum of 4 ft above the seasonal high ground-water table and bedrock.</p> <p>(NOTE: The landfill subgrade is the in-situ soil layer(s), constructed embankments, and select fill providing the foundation for construction of the unit.)</p>

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<p>SO.60.4.NC. Aboveground or on ground leachate storage tanks constructed at MSWLFs after 9 October 1993 must meet specific design requirements (15A NCAC 13B.1680(c)).</p>	<p>Verify that minimum post-settlement slope for the subgrade is 2 percent.</p> <p>Verify that safety factors are adequately specified for facilities located in seismic impact zones.</p> <p>Verify that aboveground or on ground tanks are constructed of concrete, steel, or other material approved by the Division.</p> <p>Verify that aboveground or on ground tanks are supported on a well drained stable foundation which prevents movement, rolling, or settling.</p> <p>Verify that exterior surfaces of all steel storage tanks are protected by a primer coat, a bond coat, and 2 or more final coats of paint, or have at least an equivalent surface coating system designed to prevent corrosion and deterioration.</p> <p>Verify that the interior of all tanks consists of a material, or is lined with a material, resistant to the liquid being stored.</p> <p>Verify that the tanks have a secondary containment system consisting of dikes, liners, pads, ponds, impoundments, curbs, ditches, sumps, or other systems capable of containing the stored liquid.</p> <p>Verify that provisions are included for removal of any accumulated precipitation from secondary containment and is initiated within 24 h or when 10 percent of the storage capacity is reached, whichever occurs first.</p> <p>Verify that disposal of precipitation is in compliance with all applicable Federal and state regulations.</p> <p>Verify that the tanks are equipped with an overflow prevention system.</p> <p>Verify that overflow control equipment is inspected weekly to ensure it is in good working order.</p> <p>Verify that all uncovered tanks have a minimum 2 ft of freeboard.</p> <p>Verify that odor and vector control is practiced when necessary.</p>
<p>SO.60.5.NC. Underground leachate storage tanks constructed at MSWLFs after 9 October 1993 must meet specific design requirements (15A NCAC 13B.1680 (d) (1) through (4)).</p>	<p>Verify that underground tanks are placed a minimum of 2 ft above the seasonal high groundwater table and a minimum of 2 ft vertical separation is maintained between bedrock and the lowest point of the tank.</p> <p>Verify that underground tanks are constructed of fiberglass reinforced plastic, steel that is cathodically protected, steel clad with fiberglass, or any other materials approved by the Division.</p>

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<p>SO.60.6.NC. Surface impoundments constructed at MSWLFs after 9 October 1993 must meet design requirements (15A NCAC 13B.1680 (e)).</p>	<p>Verify that secondary containment and a continuous leak detection system is installed in the form of a double-walled tank, designed as an integral structure so that any release from the inner tank is completely contained by the outer shell.</p> <p>Verify that any tank system vulnerable to corrosion is protected from both corrosion of the primary tank interior and the external surface of the outer shell.</p> <p>Verify that all resistant coatings applied to the primary tank interior are chemically compatible with the liquid to be stored.</p> <p>Verify that all underground tanks are equipped with an overfill prevention system</p> <p>Verify that any surface impoundment is constructed so that the bottom elevation of liquid is at least 4 ft above the seasonal high groundwater table and bedrock.</p> <p>Verify that, minimally, surface impoundments are designed and constructed with a liner system equivalent to the liner system for the landfill unit generating the liquid.</p> <p>Verify that a surface impoundment designed and constructed to store leachate from a new MSWLF unit includes a composite liner or an alternative, approved liner system designed and constructed to achieve at least an equivalent containment efficiency.</p> <p>Verify that construction of liner system components is consistent with pertinent requirements for compacted clay liners and geomembrane liners at MSWLFs, and a construction quality assurance report is prepared by the project engineer.</p> <p>Verify that the top liner is protected from degradation and damage.</p> <p>Verify that a minimum of 2 ft of freeboard is maintained in the surface impoundment.</p> <p>Verify that odor and vector control is practiced when necessary.</p> <p>Verify that a groundwater monitoring system is installed and sampled in a manner consistent with groundwater monitoring requirements for MSWLF units, or according to an alternative system approved by the Division.</p> <p>Verify that an operation plan is prepared and followed for operation of the surface impoundment.</p>

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<p>SO.65.3.NC. MSWLFs must meet cover material requirements (15A NCAC 13B.1626 (2)).</p> <p>SO.65.4.NC. MSWLFs must meet health and safety requirements (15A NCAC 13B.1626 (3) and (4)) [Revised March 1998].</p>	<ul style="list-style-type: none"> - development of a contingency plan to properly manage any identified hazardous and liquid wastes. <p>Verify that waste placement at existing MSWLF units meets the following criteria:</p> <ul style="list-style-type: none"> - at existing MSWLF units not designed and constructed with an approved base liner system, within areal limits of the actual waste boundary established prior to 9 October 1993 and in a manner consistent with the effective permit - at existing MSWLF units designed and constructed with a base liner system permitted by the Division prior to 9 October 1993 and approved for operation, within areal limits of the base liner system and in manner consistent with the effective permit. <p>Verify that disposed solid waste is covered with 6 in. of earthen material at the end of each operating day, or at more frequent intervals, if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging.</p> <p>Verify that areas, which will not have additional wastes, placed on them for 12 mo or more, but where final termination of disposal operations has not occurred, are covered with a minimum of 1 ft of intermediate cover.</p> <p>Verify that onsite populations of disease vectors are prevented or controlled using techniques appropriate for protection of human health and the environment.</p> <p>Verify that both of the following conditions are met:</p> <ul style="list-style-type: none"> - the concentration of methane gas generated does not exceed 25 percent of the lower explosive level (LEL) for methane in facility structures (excluding gas control or recovery system components) - the concentration of methane gas does not exceed the LEL for methane at the facility property boundary. <p>Verify that a routine methane monitoring program is implemented to ensure that these standards are met.</p> <p>Verify that the MSWLF has a permanent monitoring system.</p> <p>Verify that, if methane gas levels exceeding these limits are detected, the following steps are taken:</p> <ul style="list-style-type: none"> - upon detection, all steps necessary to ensure protection of human health and the Division is notified - within 7 days of detection, methane gas levels detected and a description of

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<p>SO.65.5.NC. MSWLFs must meet security and operational requirements (15A NCAC 13B.1626 (6)) [Revised March 2007].</p>	<p>steps taken to protect human health are placed in the operating record - within 60 days of detection, a remediation plan for methane gas releases is implemented, a copy of the plan is placed in the operating record, and the Division is notified that the plan has been implemented.</p> <p>Verify that the MSWLF is adequately secured with gates, chains, berms, fences, or other security measures approved by the Division to prevent unauthorized entry.</p> <p>Verify that an attendant is on duty at all times when the MSWLF is open for public use in order to ensure compliance with operational requirements.</p> <p>Verify that the access road to the MSWLF is of all-weather construction and maintained in good condition.</p> <p>Verify that dust control measures are implemented when necessary.</p> <p>Verify that signs providing information on dumping procedures, hours open for public use, the permit number, and other pertinent information specified in permit is posted at the site entrance.</p> <p>Verify that signs are posted stating that no hazardous or liquid waste can be received.</p> <p>Verify that traffic signs or markers are provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.</p> <p>Verify that the removal of solid waste from a MSWLF is prohibited unless the owner or operator approves and removal is not performed on the working face.</p> <p>Verify that barrels and drums are not disposed of unless empty and perforated sufficiently to ensure they contain no liquid or hazardous waste, except fiber drums containing asbestos.</p>
<p>SO.65.6.NC. MSWLFs must meet air emissions requirements (15A NCAC 13B.1626 (5)).</p>	<p>Verify that any applicable requirements developed under a State Implementation Plan (SIP), approved or promulgated by the USEPA Administrator pursuant to Section 110 of the <i>Clean Air Act</i>, as amended, are not violated.</p> <p>Verify that open burning of solid waste, except for infrequent burning of land clearing debris generated onsite or debris from emergency clean-up operations, is prohibited at all MSWLF units.</p> <p>Verify that any such infrequent burning is approved by the Division.</p> <p>Verify that equipment is provided to control accidental fires or arrangements are</p>

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<p>SO.65.7.NC. MSWLFs must meet erosion, sedimentation, and drainage requirements (15A NCAC 13B.1626 (7), (8), and (12)) [Revised March 2007].</p>	<p>made with the local fire protection agency to immediately provide fire-fighting services when needed.</p> <p>Verify that, if a fire occurs, verbal notice is provided to the Division within 24 h and written notification is submitted within 15 days.</p> <p>Verify that adequate sediment control measures (structures or devices) are used to prevent silt from leaving the MSWLF and to prevent excessive onsite erosion.</p> <p>Verify a vegetative ground cover sufficient to restrain erosion is accomplished within 30 working days or 120 calendar days upon completion of any phase of MSWLF development.</p> <p>Verify that surface water is diverted from the operational area and is not impounded over or in waste.</p> <p>Verify that solid waste is not disposed by water.</p> <p>Verify that leachate is contained onsite or properly treated prior to discharge.</p> <p>(NOTE: An NPDES permit may be required prior to the discharge of leachate to surface waters.)</p> <p>Verify that MSWLFs do not cause either:</p> <ul style="list-style-type: none"> - discharge of pollutants into waters of the United States, including wetlands, in violation of the Clean Water Act - discharge of a nonpoint source of pollution to waters of the United States, including wetlands, in violation of an area-wide or state-wide water quality management plan approved under Section 208 or 319 of the Clean Water Act, as amended. <p>Verify that a MSWLF designed with a leachate collection system (LCS) establishes and maintains a leachate management plan which, minimally, includes the following requirements:</p> <ul style="list-style-type: none"> - periodic maintenance of the LCS - maintaining records for the amounts of leachate generated - semi-annual leachate quality sampling - approval for final leachate disposal - a contingency plan for extreme operational conditions.
<p>SO.65.8.NC. MSWLFs must meet restrictions regarding the disposal of liquids (15A NCAC 13B.1626 (9))</p>	<p>Verify that bulk or noncontainerized liquid waste are not placed in MSWLF units unless the waste is either:</p> <ul style="list-style-type: none"> - household waste other than septic waste and waste oil

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SO.67.3.NC. MSWLFs must meet operational requirements for gas collection and control systems (15A NCAC 2D.1705 and 2D.1707) [Added March 2001].	<p>Director.</p> <p>Verify that a gas collection system that meets the requirements of 40 CFR 60.752(b) (2) (ii) is installed.</p> <p>Verify that the collected emissions of MSW landfill gas is controlled through the use of one or more of the following control devices:</p> <ul style="list-style-type: none"> - an open flare designed and operated in accordance with the parameters established in 40 CFR 60.18 - a control system designed and operated to reduce NMOC by 98 weight percent - an enclosed combustor designed and operated to reduce the outlet NMOC concentration to 20 parts per million as hexane by volume, on a dry basis at 3 percent oxygen, or less. <p>(NOTE: The gas collection and control system may be capped or removed provided that all the conditions of 40 CFR 60.752(b) (2) (v) (A), (B) and (C) are met.)</p> <p>(NOTE: See SO.67.1 NC. for applicability.)</p> <p>Verify that the collection system is operated in accordance with 40 CFR 60.753(a) (see SO.67.9.US.).</p> <p>Verify that the collection system is operated with negative pressure at each wellhead in accordance with 40 CFR 60.753(b).</p> <p>Verify that each interior wellhead in the collection system is operated in accordance with 40 CFR 60.753(c).</p> <p>Verify that the collection system is operated so that the methane concentration is less than 500 ppm above background at the surface of the landfill.</p> <p>(NOTE: To determine if this level is exceeded, the owner and operator shall follow the procedures given in 40 CFR 60.753(d).)</p> <p>Verify that in the event that the gas collection and control system is inoperable, measures are taken as outlined in 40 CFR 60.753(e).</p> <p>Verify that the control system is operated at all times when the collected gas is routed to the control system.</p> <p>Verify that corrective action is taken, as specified in 40 CFR 60.755(c), if monitoring demonstrates that the operation standards and requirements are not met.</p> <p>(NOTE: If the required corrective actions are taken, the emissions monitored shall</p>

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SO.67.4.NC. MSWLFs must meet reporting and recordkeeping requirements for gas collection and control systems (15A NCAC 2D.1705) [Added March 2001].	<p>not be considered a violation of the operational standards.)</p> <p>Verify that the monitoring requirements in SO.67.6.US are met.</p> <p>(NOTE: See SO.67.1 NC. for applicability.)</p> <p>Verify that the reporting requirements found in SO.67.7.US are met.</p> <p>Verify that the recordkeeping requirements found in SO.67.8.US are met.</p>

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<p>MUNICIPAL SOLID WASTE LANDFILLS</p> <p>SO.70. Groundwater Monitoring Criteria</p> <p>SO.70.1.NC. MSWLFs must have a groundwater monitoring system (15A NCAC 13B.1631 (a) (1) (A), (B), (C), and (2) (A), (b) (1) and (2), (c) (1) and (2), and (d) (1) and (2)) [Revised March 1998].</p>	<p>Verify that a groundwater monitoring system is installed consisting of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that represents both:</p> <ul style="list-style-type: none"> - the quality of background groundwater not affected by leakage from the unit - background water quality based on sampling of a well hydraulically upgradient of the waste management area. <p>(NOTE: The determination of background water quality may include sampling of wells not hydraulically upgradient of the waste water area where:</p> <ul style="list-style-type: none"> - hydrogeologic conditions do not allow the operator to determine which are hydraulically upgradient, or - hydrogeologic conditions do not allow the operator to place a well in a hydraulically upgradient location, or - sampling at other wells will provide an indication of background groundwater quality that is as representative as that provided by the upgradient well.) <p>Verify that the downgradient monitoring system is installed at the relevant point of compliance so as to ensure detection of groundwater contamination in the uppermost aquifer.</p> <p>(NOTE: The relevant point of compliance, determined by the Director, is established no more than 250 ft from a waste boundary, and is at least 50 ft within the facility property boundary.)</p> <p>Verify that monitoring wells are designed and constructed in accordance with applicable North Carolina Well Construction Standards as codified in 15A NCAC 2C (see Water Quality Management).</p> <p>Verify that the MSWLF has approval from the Division for the design, installation, development, and decommission of any monitoring well or piezometer.</p> <p>Verify that monitoring wells and piezometers are operated and maintained so that they perform to design specifications throughout the life of the monitoring program.</p> <p>Verify that the number, spacing, and depths of the monitoring system is determined based upon site-specific technical information including an</p>

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<p>SO.70.2.NC. MSWLFs must take specific steps if a statistically significant increase of particular constituents occur over background (15A NCAC 13B.1633(c)). [Revised March 1998].</p>	<p>investigation of the following:</p> <ul style="list-style-type: none"> - aquifer thickness, groundwater flow rate, and groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow - unsaturated and saturated geologic units (including fill materials) overlying and comprising the uppermost aquifer, including but not limited to: thickness, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities. <p>Verify that the proposed monitoring plan is both:</p> <ul style="list-style-type: none"> - certified by a Licensed Geologist or Professional Engineer to be effective in providing early detection of any release of hazardous constituents (from any point in a disposal cell or leachate surface impoundment) to the uppermost aquifer - approved by the Division - approved monitoring plan is placed in the operating record. <p>Verify that, if a statistically significant increase over background is found for one or more of the constituents listed in Appendix I of 40 CFR Part 258, Appendix I Constituents for Detection Monitoring at any monitoring well at the relevant point of compliance, the following steps are taken:</p> <ul style="list-style-type: none"> - within 14 days of this finding, a report is made to the Division and a notice is placed in the operating record indicating which constituents have shown statistically significant changes from background levels - an assessment monitoring program is established within 90 days. <p>(NOTE: The MSWLF may demonstrate that another source caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a licensed geologist or professional engineer and approved by the Division.)</p>
<p>SO.70.3.NC. MSWLFs must meet specific requirements when establishing and running an assessment monitoring program (15A NCAC 13B.1634 (a), (b), (d), (f), (g), and (h)).</p>	<p>Verify that, within 90 days of initiating an assessment monitoring program and annually thereafter, the MSWLF samples and analyzes groundwater for all constituents identified in Appendix II of 40 CFR Part 258.</p> <p>(NOTE: 40 CFR Part 258 -- Appendix II List of Hazardous Inorganic and Organic Constituents, is incorporated by reference including subsequent amendments and editions.)</p> <p>Verify that a minimum of one sample from each downgradient well is collected and analyzed during each sampling event.</p>

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	<p>Verify that, for any constituent detected in downgradient wells as the result of the complete Appendix II analysis, a minimum of 4 independent samples from each well (background and downgradient) are collected and analyzed to establish background for the new constituents.</p> <p>Verify that, after obtaining results from initial or subsequent sampling events, the MSWLF takes the following steps:</p> <ul style="list-style-type: none"> - within 14 days, submits a report to the Division and places a notice in the operating record identifying Appendix II constituents that have been detected - within 90 days and on at least a semiannual basis thereafter, resamples all monitoring wells for all constituents listed in Appendix I and for those constituents in Appendix II that have been detected with a report from each sampling event submitted to the Division and placed in the facility operating record - establishes and reports to the Division background concentrations for any constituents detected - obtains a determination from the Division to establish groundwater protection standards for all constituents detected. <p>Verify that, if concentrations of any Appendix II constituents are above background values but below approved groundwater protection standards using approved statistical procedures, the MSWLF continues assessment monitoring.</p> <p>Verify that, if one or more Appendix II constituents are detected at statistically significant levels above approved groundwater protection standards in any sampling event, the MSWLF, within 14 days of this finding, submits a report to the Division, places a notice in the operating record, and notifies all appropriate local government officials.</p> <p>Verify that the MSWLF also takes all of the following steps:</p> <ul style="list-style-type: none"> - characterizes the nature and extent of the release by installing additional monitoring wells, as necessary - installs at least one additional monitoring well at the facility boundary in the direction of contaminant migration and samples this well for all constituents listed in Appendix I and for those constituents in Appendix II that have been detected - notifies all persons who own land or reside on land directly overlying any part of the plume of contamination if contaminants have migrated offsite - within 90 days, initiates an assessment of corrective measures. <p>(NOTE: The MSWLF may demonstrate that another source caused the contamination, or the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a Licensed Geologist or Professional Engineer and approved by the Division. A copy of the approved report is placed in the operating record. If a successful demonstration is made, the MSWLF continues assessment monitoring, and may return to detection</p>

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<p>SO.70.4.NC. MSWLFs must initiate an assessment of corrective actions measures if constituents are detected at a statistically significant level (15A NCAC 13B.1635).</p>	<p>monitoring if the Appendix II constituents are at or below background and approval is given by the Division.)</p> <p>Verify that the MSWLF obtains a determination from the Division on establishing a groundwater protection standard for each Appendix II constituent detected in the groundwater.</p> <p>Verify that, within 90 days of finding any of the constituents listed in Appendix II at a statistically significant level exceeding groundwater protection standards, the MSWLF initiates an assessment of corrective action measures.</p> <p>Verify that such an assessment is completed within a reasonable period of time.</p> <p>Verify that the MSWLF continues to monitor in accordance with the approved assessment monitoring program.</p> <p>Verify that the assessment includes an analysis of the effectiveness of potential corrective measures in meeting all requirements and objectives of the remedy, addressing at least the following:</p> <ul style="list-style-type: none"> - performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination - time required to begin and complete the remedy - costs of remedy implementation - institutional requirements such as state and local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy. <p>Verify that the MSWLF discusses results of the assessment, prior to selection of a remedy, in a public meeting with interested and affected parties.</p> <p>Verify that the MSWLF provides public notice of the meeting at least 30 days prior to the meeting with the time, place, date, and purpose of the meeting.</p> <p>Verify that a copy of the public notice is forwarded to the Division at least 5 days prior to publication and a copy is mailed to those persons requesting notification.</p> <p>Verify that the public notice encompasses both of the following:</p> <ul style="list-style-type: none"> - a legal advertisement placed in the newspaper or newspapers serving the county - provision of a news release to at least one newspaper, one radio station, and one television station serving the county.
<p>SO.70.5.NC. MSWLFs must</p>	<p>Verify that, based on results of the corrective measures assessment, the MSWLF</p>

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<p>select a remedy based on the results of the corrective measures assessment according to specific standards (15A NCAC 13B.1636(a), (b)(1), (2), (3), and (4), (d)) [Revised March 1998].</p> <p>SO.70.6.NC. MSWLFs must implement corrective action ground-water monitoring program according to specific standards (15A NCAC 13B.1637 (a), (b), (d), (e), and (f)) [Revised March 1998].</p>	<p>selects a remedy that, minimally, meets the following standards:</p> <ul style="list-style-type: none"> - is protective of human health and the environment - attains approved groundwater protection standards - controls the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix II constituents into the environment that may pose a threat to human health or the environment - complies with standards for management of wastes. <p>Verify that, within 14 days of selecting a remedy, the MSWLF submits an application to modify the permit describing the selected remedy to the Division for evaluation and approval.</p> <p>Verify that the MSWLF specifies as part of the selected remedy a schedule for initiating and completing remedial activities, approved by the Division.</p> <p>Verify that, based on the approved schedule for initiation and completion of remedial activities, the MSWLF takes the following steps:</p> <ul style="list-style-type: none"> - establishes and implements a corrective action groundwater monitoring program that meets all of the following criteria: <ul style="list-style-type: none"> - at a minimum, meets requirements of an assessment monitoring program - indicates effectiveness of the corrective action remedy - demonstrates compliance with groundwater protection standards - implements the approved corrective action remedy - takes any interim measures necessary to ensure protection of human health and the environment; the following factors are considered when determining whether interim measures are necessary: <ul style="list-style-type: none"> - time required to develop and implement a final remedy - actual or potential exposure of nearby populations or environmental receptors to hazardous constituents - actual or potential contamination of drinking water supplies or sensitive ecosystems - further degradation of groundwater that may occur if remedial action is not initiated expeditiously - weather conditions that may cause hazardous constituents to migrate or be released - risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system - other situations that may pose threats to human health or the environment. <p>Verify that, if the MSWLF or the Division determines compliance is not being achieved through the remedy selected, other methods or techniques are implemented, as approved by the Division that could practicably achieve</p>

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	<p>compliance.</p> <p>Verify that all solid wastes managed pursuant to a required remedy, or an interim measure, are managed in a manner:</p> <ul style="list-style-type: none"> - that is protective of human health and the environment - that complies with applicable RCRA requirements. <p>(NOTE: Selected remedies are considered complete when:</p> <ul style="list-style-type: none"> - the MSWLF complies with approved groundwater protection standards at all points within the plume of contamination that lie beyond the relevant point of compliance - compliance with approved groundwater protection standards has been achieved by demonstrating that concentrations of Appendix II constituents have not exceeded these standards for 3 consecutive years - all actions required to complete the remedy have been satisfied.) <p>Verify that, upon completion of the remedy, the MSWLF submits a report signed by the MSWLF and by a licensed geologist or professional engineer to the Division documenting that the remedy has been completed.</p>

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<p>MUNICIPAL SOLID WASTE LANDFILLS</p> <p>SO.75. Closure Criteria</p> <p>SO.75.1.NC. MSWLFs must meet closure requirements (15A NCAC 13B.1627(c) (1) (A), (B), and (C), (3) (B), (4), (5), (6), (7), and (8)) [Revised March 1998].</p>	<p>Verify that new and existing MSWLF units and lateral expansions install a cap system designed to minimize infiltration and erosion.</p> <p>Verify that the cap system is designed and constructed to meet all of the following criteria:</p> <ul style="list-style-type: none"> - have a permeability less than or equal to the permeability of any base liner system, or the in-situ subsoils underlying the landfill, or the permeability specified for final cover, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less - minimize infiltration through the closed MSWLF by use of a low-permeability barrier containing a minimum 18 in. of earthen material - minimize erosion of the cap system and protect the low-permeability barrier from root penetration by use of an erosion layer containing a minimum of 6 in. of earthen material capable of sustaining native plant growth. <p>Verify that a gas venting or collection system is installed below the low-permeability barrier to minimize pressures exerted on the barrier.</p> <p>Verify that, prior to beginning closure of each MSWLF unit, the Division is notified that a notice of intent to close the unit has been placed in the operating record.</p> <p>Verify that closure activities begin no later than 30 days after the date on which the unit receives the known final wastes or, if the unit has remaining capacity and there is a reasonable likelihood it will receive additional wastes, no later than 1 yr after the most recent receipt of wastes.</p> <p>Verify that closure activities of each unit are completed in accordance with the closure plan within 180 days following beginning closure.</p> <p>Verify that, following closure, the Division is notified that a certification, signed by the project engineer verifying closure has been completed in accordance with the closure plan, has been placed in the operating record.</p> <p>Verify that, following closure of all units, the MSWLF records a notation on the deed to the landfill facility property, or some other instrument that is normally examined during title search, and notifies the Division that the notation has been recorded and a copy has been placed in the operating record.</p> <p>Verify that the notation on the deed notifies in perpetuity any potential purchaser of the property that the land has been used as a landfill facility and its use is</p>

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<p>SO.75.2.NC. MSWLF units operating without a base liner system must not receive solid waste (15A NCAC 13B.1627(c) (10) (A), (B), and (C)).</p> <p>SO.75.3.NC. Leachate storage facilities constructed at MSWLFs after 9 October 1993 must meet closure requirements (15A NCAC 13B.1680 (f)).</p>	<p>restricted under the closure plan approved by the Division.</p> <p>(NOTE: The owner or operator may request permission from the Division to remove the notation from the deed if all wastes are removed).</p> <p>Verify that the existing MSWLF unit ceased receiving solid waste on or before 1 January 1998.</p> <p>(NOTE: The Division will schedule closure of the MSWLF unit.)</p> <p>Verify that final contours for the unit are consistent with capacity requirements necessary to close the unit in accordance with requirements.</p> <p>Verify that the owner or operator of the liquid storage facility prepares a written closure plan and submits the plan with the permit application for the MSWLF.</p> <p>Verify that closure activities are completed in accordance with the approved closure plan and within 180 days after liquid collection has ceased.</p> <p>Verify that, at closure, all solid waste is removed from the tank or surface impoundment, connecting lines, and any associated secondary containment systems.</p> <p>Verify that all solid waste removed is properly handled and disposed of according to Federal and State requirements.</p> <p>Verify that all connecting lines are disconnected and securely capped or plugged.</p> <p>Verify that underground tanks are removed or thoroughly cleaned to remove traces of waste and all accumulated sediments and then filled to capacity with a solid inert material, such as clean sand or concrete slurry.</p> <p>Verify that, if groundwater surrounding the tank is found to be contaminated, the tank and surrounding contaminated soil is removed and appropriately disposed.</p> <p>Verify that accessways to aboveground and onground tanks are securely fastened in place to prevent unauthorized access and tanks are either stenciled with the date of permanent closure or removed.</p> <p>Verify that the secondary containment system is perforated to provide for drainage.</p> <p>Verify that, for surface impoundments, all waste residues, contaminated system components (liners, etc.), contaminated subsoils, and structures and equipment</p>

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	<p>contaminated with waste are removed and appropriately disposed.</p> <p>(NOTE: If groundwater surrounding the impoundment is contaminated, other corrective actions to remediate a contaminant plume may be required by the Department. If groundwater surrounding the impoundment is found not to be contaminated, the liner system may remain in place if drained, cleaned to remove all traces of waste, and both liners punctured so that drainage is allowed. The impoundment is to be backfilled and regraded to the surrounding topography.)</p>

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MUNICIPAL SOLID WASTE LANDFILLS SO.80. Post-closure Care Requirements SO.80.1.NC. MSWLFs must meet postclosure requirements (15A NCAC 13B.1627 (d) (1) and (3)). [Revised March 1998].	<p>Verify that, following closure of each MSWLF unit, the owner or operator conducts postclosure care.</p> <p>Verify that postclosure care is conducted for 30 yr and consists of at least the following steps:</p> <ul style="list-style-type: none"> - maintaining the integrity and effectiveness of any cap system, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing runoff and runoff from eroding or otherwise damaging the cap system - maintaining and operating the leachate collection system (LCS) - monitoring groundwater and surface water, maintaining the groundwater monitoring system, if applicable, and monitoring surface water - maintaining and operating the gas monitoring system. <p>Verify that, following completion of the postclosure care period for each unit, the owner or operator notifies the Division that a certification, signed by a registered professional engineer verifying postclosure care has been completed in accordance with the postclosure plan, has been placed in the operating record.</p>

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MEDICAL WASTE SO.105. Generators SO.105.1.NC. Generators of regulated medical waste must have a management plan (15A NCAC 13B.1204(c)).	Verify that a plan to ensure proper management of regulated medical waste is prepared and maintained at the generating facility.

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	<p>between 35 and 45 deg F.</p> <p>Verify that only authorized personnel have access to areas used to store the waste.</p> <p>Verify that the storage areas meet the following requirements:</p> <ul style="list-style-type: none"> - are kept clean - vermin and insects are controlled - all floor drains discharge directly to an approved sanitary sewage system - ventilation is provided and discharges so as not to create nuisance odors. <p>Verify that a plan is prepared, maintained, and updated as necessary to ensure continued proper management of regulated medical waste.</p>

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	<p>vehicles, in accordance with Department of Transportation Standards and 49 CFR 172 Subpart F.</p> <p>Verify that regulated medical waste is delivered to a permitted storage or treatment facility within 7 calendar days of the date of shipment from the generator.</p> <p>Verify that refrigeration at an ambient temperature between 35 and 45 deg F is maintained for regulated medical waste that will not be delivered for treatment within 7 calendar days.</p> <p>Verify that a contingency plan is prepared and maintained in each vehicle used in transporting of regulated medical waste and the operator of each vehicle is knowledgeable of the plan.</p> <p>Verify that vehicles used for transportation of regulated medical waste are thoroughly cleaned and disinfected with a mycobacteriocidal disinfectant before being used for any other purpose and in the event of leakage from packages.</p> <p>Verify that, while transporting regulated medical waste, vehicles do not transport any material other than solid waste and supplies related to the handling of medical waste.</p>

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<p>MEDICAL WASTE</p> <p>SO.120. Treatment/Disposal</p> <p>SO.120.1.NC. Treatment of regulated medical waste by steam sterilization must meet specific requirements (15A NCAC 13B.1207 (2) (a) through (e)).</p> <p>SO.120.2.NC. Treatment of regulated medical waste by incineration must meet specific requirements (15A NCAC 13B.1207 (3) (a) through (j)).</p>	<p>Verify that, when steam sterilization is used, steam under pressure is provided to maintain a minimum temperature of 250 deg F for 45 min at 15 psig during each cycle, or other combinations of parameters shown to effectively treat the waste.</p> <p>Verify that the steam sterilization unit is provided with the following:</p> <ul style="list-style-type: none"> - a chart recorder which accurately records time and temperature of each cycle - a gauge which indicates the pressure of each cycle. <p>Verify that monitoring under conditions of full loading for effectiveness of treatment is performed at least once a week using biological indicators or other methods approved by the Division.</p> <p>(NOTE: Treated regulated medical waste may be disposed of until or unless monitoring does not confirm effectiveness.)</p> <p>Verify that the treatment of regulated medical waste by incineration meets specific requirements.</p> <p>Verify that the waste is subjected to a burn temperature in the primary chamber of not less than 1200 deg F.</p> <p>Verify that automatic auxiliary burners are provided which are capable of independently maintaining secondary chamber temperatures at a minimum of 1800 °F, excluding heat content of the wastes.</p> <p>Verify that interlocks or other process control devices are provided to prevent the introduction of waste material to the primary chamber until the secondary chamber achieves operating temperature.</p> <p>Verify that gases generated by the combustion are subjected to a minimum temperature of 1800 deg F for not less than 1 s.</p> <p>Verify that continuous monitoring and recording of primary and secondary chamber temperatures is performed and monitoring data is maintained for 3 yr.</p> <p>Verify that an Air Quality Permit is obtained from the Division of Environmental Management prior to construction and operation (see Air Emissions Management).</p> <p>Verify that a plan of procedures for obtaining representative weekly and monthly</p>

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	<p>composite ash samples is submitted for Division approval prior to system startup and operation.</p> <p>Verify that the plan, minimally, includes the following procedures:</p> <ul style="list-style-type: none"> - a representative sample of about 1 kg (2.2 lb) is collected once for either: <ul style="list-style-type: none"> - every 8 h of operation of a continuously fed incinerator - every 24 h of operation of an intermittently operated incinerator - every batch of a batch loaded incinerator - samples are collected from either the discharge of the ash conveyor or from the ash collection containers prior to disposal - samples are composted in a closed container weekly and are thoroughly mixed and reduced to a representative sample - representative samples are composted into monthly samples - for the first 3 mo of operation, each monthly sample is analyzed - for the remainder of the first year of operation, representative monthly samples are composted into a quarterly sample and analyzed at the end of each quarter - after the first year, representative samples are analyzed at least twice a year. <p>Verify that ash sampling procedures are initiated at the time the incineration system is first started for normal operation.</p> <p>Verify that existing generating facilities conduct one weekly representative ash sampling and testing annually during the second quarter of each calendar year.</p>
SO.120.3.NC. Chemical treatment for medical waste must meet specific requirements (15A NCAC 13B.1207 (4)).	<p>Verify that, during chemical treatment of medical waste, cultures of throat, urine, sputum, skin, and genitourinal tract which contain only the following organisms; <i>N. gonorrhea</i>, <i>E. coli</i>, <i>staphylococcus</i>, <i>proteus</i>, <i>Candida albicans</i>, and <i>B. cereus</i> or normal flora in individual plates or tubes containing 5-20 mL media are covered for a minimum of 1 h, with a 1:5 dilution of household bleach (5.25 percent sodium hypochlorite) in water.</p> <p>Verify that the solution remains on the treated plates, which are stacked in a sealed plastic bag prior to disposal.</p> <p>Verify that the bag is to be sealed to prevent leakage.</p> <p>(NOTE: Approval for other types of chemical treatment must be obtained from the Division.)</p>
SO.120.4.NC. Treatment of regulated medical waste by microwaves must meet specific requirements (15A	<p>Verify that microwave energy of appropriate output frequency is provided such that a minimum temperature of 95 deg C (203 deg F) is maintained for a minimum of 30 min each cycle, or other combinations of parameters shown to effectively treat the waste.</p>

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MEDICAL WASTE SO.125. Documentation SO.125.1.NC. Transporters of regulated medical waste must meet specific recordkeeping requirements (15A NCAC 13B.1204 (b)). SO.125.2.NC. Regulated medical waste treatment facilities must prepare a plan (15A NCAC 13B.1207 (1) (h) through (j)). SO.125.3.NC. Logs must be maintained of regulated medical waste steam sterilization treatments (15A NCAC 13B.1207 (2) (f)).	<p>Verify that records of regulated medical waste are maintained for each shipment and include the following information:</p> <ul style="list-style-type: none"> - amount of waste by number of packages (piece count) - date shipped offsite - name of transporter - name of storage or treatment facility. <p>Verify that this information is maintained at the generating facility for at least 3 yr.</p> <p>(NOTE: These recordkeeping requirements do not apply to persons who generate less than 50 lb of regulated medical waste per month.)</p> <p>Verify that a plan is prepared, maintained, and updated as necessary to ensure continued proper management of regulated medical waste at the facility.</p> <p>Verify that records of regulated medical waste are maintained for each shipment, include the information listed below, and are maintained at the treatment facility for no less than 3 yr:</p> <ul style="list-style-type: none"> - name and address of generator - date received - amount of waste received by number of packages (piece count) from each generator - date treated - name and address of ultimate disposal facility. <p>Verify that regulated medical waste treatment facilities treating waste generated offsite submit to the Division an annual report, by 1 August of each year, on a form prescribed and approved by the Division.</p> <p>Verify that a log of each test of treatment effectiveness performed on a steam sterilization unit is maintained and includes the type of indicator used, date, time, and result of test.</p>

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<p>SO.125.4.NC. Logs must be maintained of regulated medical waste incineration ash sampling (15A NCAC 13B.1207 (3) (k) and (l)).</p>	<p>Verify that a log is kept documenting ash sampling, including the following information:</p> <ul style="list-style-type: none"> - date and time of each sample collected - date, time, and identification number of each composite sample - results of the analyses, including laboratory identification. <p>Verify that records of stack testing as prescribed in the Air Quality Permit are maintained.</p>
<p>SO.125.5.NC. Logs must be maintained of regulated medical waste treatment by microwaves (15A NCAC 13B.1207 (5) (d)).</p>	<p>Verify that a log of each test of microwave treatment effectiveness performed is maintained and includes the type of indicator used, date, time, and result of the test.</p>

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SO.135. LANDFILLS SO.135.1.NC. Active sanitary landfills must meet design requirements (15A NCAC 13B.0103 (i)) [Revised March 1998]. SO.135.2.NC. Solid waste disposal sites must meet siting requirements (15A NCAC 13B.0503 (1)) [Revised March 1998]. SO.135.3.NC. Solid waste disposal sites must meet design requirements (15A NCAC 13B.0503 (2) (a), (b), (c), (e), and (f)) [Revised March 1998].	<p>Verify that, since 1 January 1998, all active sanitary landfills (except land clearing and inert debris landfills) have been equipped with liners, leachate collection systems, and final cover systems.</p> <p>Verify that solid waste disposal sites meet requirements in order to obtain a permit.</p> <p>Verify that sites located in a floodplain:</p> <ul style="list-style-type: none"> - do not restrict the flow of a 100-yr flood - reduce temporary water storage capacity of the floodplain - result in washout of solid waste so as to pose a hazard to human life, wildlife, or land or water resources. <p>Verify that the site meets the following siting requirements:</p> <ul style="list-style-type: none"> - does not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife - does not result in destruction or adverse modification of critical habitat of endangered or threatened species as identified in 50 CFR Part 17, which is hereby incorporated by reference including any subsequent amendments and editions - does not damage or destroy an archaeological or historical site - does not cause an adverse impact on a state park, recreation, or scenic area, or any other lands included in the state nature and historic preserve - a new site disposing of putrescible wastes is not located within 10,000 ft of an airport runway used by turbojet aircraft or within 5000 ft of an airport runway used by piston-type aircraft - has available adequate suitable soils for cover either onsite or from offsite. <p>Verify that the concentration of explosive gases generated by the site do not exceed either of the following:</p> <ul style="list-style-type: none"> - 25 percent of the limit for gases in site structures (excluding gas control or recovery system components) - the lower explosive limit (LEL) for the gases at the property boundary

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	<p>Verify that the site does not allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site.</p> <p>Verify that the site meets all of the following surface water requirements:</p> <ul style="list-style-type: none"> - does not cause a discharge of pollutants into waters of the state in violation of NPDES requirements, under Section 402 of the <i>Clean Water Act</i>, as amended, or in violation of standards promulgated under GS 143-214.1 and GS 143-215 - does not cause a discharge of dredged or fill material into waters of the state in violation of requirements under Section 404 of the <i>Clean Water Act</i>, as amended, or in violation of any state requirements regulating the discharge of dredged or fill material into waters of the state, including wetlands - does not cause nonpoint source pollution of waters of the state that violates assigned water quality standards. <p>Verify that the site does not engage in open burning of solid waste.</p> <p>Verify that a disposal site, except a land clearing and inert debris landfill, meet the following buffer requirements:</p> <ul style="list-style-type: none"> - 50-ft minimum buffer between all property lines and disposal areas - 500-ft minimum buffer between private dwellings and wells and disposal areas - 50-ft minimum buffer between streams and rivers and disposal areas.
SO.135.4.NC. Sanitary landfills must meet operating requirements (15A NCAC 13B.0505 (1) and (2)) [Revised March 1998].	<p>Verify that the sanitary landfill is maintained and operated according to plan and permit requirements.</p> <p>Verify that construction plans are approved and followed.</p> <p>Verify that specified monitoring and reporting requirements are met.</p> <p>Verify that solid waste is restricted into the smallest area feasible and is compacted as densely as practical into cells.</p>
SO.135.5.NC. Sanitary landfills must meet cover requirements (15A NCAC 13B.0505 (3) and (6)) [Revised March 1998].	<p>Verify that solid waste is covered after each day of operation with a compacted layer of at least 6 in. of suitable cover or as specified by the Division.</p> <p>Verify that areas which will not have additional wastes placed on them for 12 mo or more, but where final termination of disposal operations has not occurred, are covered with a minimum of 1 ft of intermediate cover.</p> <p>Verify that after final termination of disposal operations at the site or a major part of it, or upon revocation of a permit, the area is covered with at least 2 ft of</p>

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<p>SO.135.6.NC. Sanitary landfills must meet erosion and drainage requirements (15A NCAC 13B.0505 (4), (5), and (7)) [Revised March 1998].</p> <p>SO.135.7.NC. Sanitary landfills must meet operational requirements (15A NCAC 13B.0505 (8), (9), (10), and (12)) [Revised March 1998].</p>	<p>suitable compacted earth.</p> <p>Verify that the following vegetation requirements are met:</p> <ul style="list-style-type: none"> - within 6 mo after final termination of disposal operations at the site or a major part of it or upon revocation of a permit, the area is stabilized with native grasses - temporary seeding is used as necessary to stabilize the site. <p>Verify that adequate erosion control measures are practiced to prevent either silt from leaving the site or excessive onsite erosion.</p> <p>Verify that the following drainage control requirements are met:</p> <ul style="list-style-type: none"> - surface water is diverted from the operational area - surface water is not impounded over or in waste - completed areas are adequately sloped to allow surface water runoff in a controlled manner. <p>Verify that the following water protection requirements are met:</p> <ul style="list-style-type: none"> - a separation distance of 4 ft between waste and water table is maintained unless otherwise specified by the Division in the permit - solid waste is not disposed of in water - leachate is contained onsite or properly treated prior to discharge (an NPDES permit may be required prior to discharge). <p>Verify that the following access and security requirements are met:</p> <ul style="list-style-type: none"> - the site is adequately secured by gates, chains, berms, fences, and other security measures approved by the Division, to prevent unauthorized entry. - an attendant is on duty at the site at all times while it is open for public use to ensure compliance with operational requirements - the access road is of all-weather construction and maintained in good condition - dust control measures are implemented where necessary. <p>Verify that the following sign requirements are met:</p> <ul style="list-style-type: none"> - signs providing information on dumping procedures, the hours during which the site is open for public use, the permit number, and other pertinent information are posted at the site entrance - signs are posted stating that no hazardous or liquid waste can be received without written permission from the Division - traffic signs or markers are provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient

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<p>SO.135.8.NC. Sanitary landfill must meet waste acceptance and disposal requirements (15A NCAC 13B.0505 (11)) [Revised March 1998].</p>	<p>operating conditions.</p> <p>Verify that the following safety requirements are met:</p> <ul style="list-style-type: none"> - open burning of solid waste is prohibited - equipment is provided to control accidental fires or arrangements are made with the local fire protection agency to immediately provide fire-fighting services when needed - fires are reported to the Division within 24 h and written notification is submitted within 15 days - removal of solid waste from the landfill is prohibited unless the operator approves and removal is not performed on the working face - barrels and drums are not disposed of unless empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained in them. <p>Verify that effective vector control measures are applied to control flies, rodents, and other insects or vermin when necessary.</p> <p>Verify that appropriate methods such as fencing and diking are provided within the area to confine solid waste subject to blowing.</p> <p>Verify that, at the conclusion of each day of operation, all windblown material resulting from the operation is collected and returned to the area.</p> <p>Verify that the landfill only accepts those solid wastes, which it is permitted to receive.</p> <p>Verify that the landfill operator notifies the Division within 24 h of attempted disposal of any waste it is not permitted to receive, including waste from outside the area the landfill is permitted to serve.</p> <p>Verify that no hazardous or liquid waste is accepted or disposed of in a sanitary landfill.</p> <p>Verify that spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site are covered immediately.</p> <p>(NOTE: Asbestos waste packaged in accordance with 40 CFR 61, adopted by reference, may be disposed of separate and apart from other solid wastes at the bottom of the working face or in an area not contiguous with other disposal areas; in either case, in virgin soil, separate areas are clearly marked so that asbestos is not exposed by future land-disturbing activities.)</p> <p>Verify that asbestos waste is covered immediately with soil in a manner that will not cause any asbestos to become airborne.</p> <p>(NOTE: Wastewater treatment sludges may only be used as a soil conditioner and</p>

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SO.135.9.NC. Sanitary landfill must meet closure requirements (15A NCAC 13B.0510).	<p>incorporated into the final 2 ft of cover.)</p> <p>Verify that wastewater treatment sludges are examined for acceptance by waste determination procedures.</p> <p>Verify that, when the disposal site has been closed in accordance with state operating, safety, and cover requirements, the operator takes the following steps:</p> <ul style="list-style-type: none"> - notifies the Division in writing so that the Division may make a site inspection to determine compliance with closure procedures - provides test holes, as specified by the Division, to determine compliance for final cover. <p>(NOTE: When a solid waste disposal site has been closed in accordance with the requirements of the Division, future necessary maintenance and water quality monitoring is the responsibility of the owner and the operator and is specified in the closure letter.)</p> <p>(NOTE: When a solid waste disposal site has been closed in accordance with the requirements of the Division, the permit is terminated and any future disposal at the site requires a new permit.)</p>

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<p>SO.140.</p> <p>INERT WASTE LANDFILLS</p> <p>SO.140.1.NC. Land clearing and inert debris (LCID) landfills must be permitted (15A NCAC 13B.0563 (3) and (6)) [Added March 1998; Revised March 2007].</p> <p>SO.140.2.NC. Unpermitted land clearing and inert debris (LCID) landfills must meet specific requirements (15A NCAC 13B.0563 (1) and (2)) [Revised March 1998; Revised March 2007].</p>	<p>(NOTE: Disposal in a landfill is considered to be the least desirable method of managing land clearing and inert debris.)</p> <p>Verify that an individual permit is obtained for the construction and operation of a Land Clearing and Inert Debris (LCID) landfill that meets the following conditions:</p> <ul style="list-style-type: none"> - the facility is operated for the disposal of land clearing waste, inert debris, untreated wood, and yard trash - total disposal area is greater than 2 acres in size. <p>Verify that landfills currently permitted as demolition landfills comply with the following requirements:</p> <ul style="list-style-type: none"> - only land clearing waste, inert debris, untreated wood, and yard trash are accepted for disposal unless otherwise specified in the existing permit - operations are in compliance with LCID landfill operating requirements (see NC.140.5.NC.) - existing demolition landfills comply with siting criteria requirements (see NC.140.4.NC.) or cease operations and close. <p>Verify that a land clearing and inert debris (LCID) landfill without an individual permit from the Division of Solid Waste Management meets all of the following conditions:</p> <ul style="list-style-type: none"> - the landfill is to be operated for disposal of land clearing waste, inert debris, untreated wood, and yard trash - operations are consistent and in compliance with local government solid waste management plan as approved by the Division of Solid Waste Management - total disposal area is under 2 acres in size - the landfill meets siting criteria and operational requirements for LCID landfills (see SO.140.4.NC. and SO.140.5.NC.) - fill activity complies with all other Federal, State, or local laws, ordinances, rules, regulations, or orders, including but not limited to zoning restrictions, flood plain restrictions, wetland restrictions, sedimentation and erosion control requirements, and mining regulations. <p>Verify that a land clearing and inert debris (LCID) landfill without an individual permit meet the following notification requirements:</p>

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<p>SO.140.3.NC. [Deleted March 2007].</p> <p>SO.140.4.NC. Land clearing and inert debris (LCID) landfills must meet siting requirements (15A NCAC 13B.0564) [Revised March 2007].</p>	<ul style="list-style-type: none"> - the landfill notifies the Division on a prescribed form, duly signed, notarized, and recorded - the landfill files the prescribed notification form for recordation in the Register of Deeds' Office - when the land on which the LCID landfill is sold, leased, conveyed, or transferred in any manner, the deed or other instrument of transfer contains in the description section that the property has been used as an LCID landfill and a reference by book and page to the recordation of the notification. <p>(NOTE: 15A NCAC 13B.0563 (3) and (4) incorporated in SO.140.1.NC.)</p> <p>Verify that LCID landfills are not located in the 100-yr floodplain.</p> <p>Verify that LCID landfills do not cause or contribute to the following:</p> <ul style="list-style-type: none"> - taking of any endangered or threatened species of plants, fish, or wildlife - destruction or adverse modification of the critical habitat of endangered or threatened species - damage or destroy an archaeological or historical site - cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve - facilities are not located in any wetland. <p>Verify that the LCID landfill site has adequate suitable soils available for cover, either from on or offsite.</p> <p>Verify that LCID landfills meet the following surface and groundwater requirements:</p> <ul style="list-style-type: none"> - landfills or practices do not cause a discharge of pollutants into waters of the state in violation of the requirements of NPDES, under Section 402 of the <i>Clean Water Act</i>, as amended - landfills or practices do not cause a discharge of dredged or fill material into waters of the state in violation of requirements under Section 404 of the <i>Clean Water Act</i>, as amended - landfills or practices do not cause nonpoint source pollution of waters of the state that violates assigned water quality standards - waste in landfills with a disposal area greater than 2 acres is placed a minimum of 4 ft above the seasonal high water table, except where an alternative separation is approved by the Division - waste in landfills with a disposal area less than 2 acres is placed above the seasonal high water table. <p>Verify that the landfill meets the following minimum buffer requirements:</p>

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SO.140.5.NC. Land clearing and inert debris (LCID) landfills must meet specific operating requirements (15A NCAC 13B.0566) [Revised March 2007].	<ul style="list-style-type: none"> - 50 ft from the waste boundary to all surface waters of the state as defined in GS 143-212 - 100 ft from the disposal area to property lines, residential dwellings, commercial or public buildings, and wells. <p>(NOTE: Buffer requirements may be adjusted as necessary to ensure adequate protection of public health and the environment.)</p> <p>Verify that the landfill meets all requirements of any applicable zoning ordinance.</p> <p>Verify that the landfill only accepts those solid wastes that it is permitted to receive.</p> <p>Verify that solid waste is restricted to the smallest area feasible and compacted as densely as practical into cells.</p> <p>Verify that adequate soil cover is applied monthly, or when the active area reaches 1 acre in size, whichever occurs first.</p> <p>Verify that 120 calendar days after completion of any phase of disposal operations, or upon revocation of a permit, the disposal area is covered with a minimum of 1 ft of suitable soil cover sloped to allow surface water runoff in a controlled manner.</p> <p>Verify that adequate erosion control measures, structures, or devices are used to prevent silt from leaving the site and to prevent excessive onsite erosion.</p> <p>Verify that provisions for groundcover sufficient to restrain erosion are completed within 30 working days or 120 calendar days after completion of any phase of landfill development.</p> <p>Verify that the landfill is adequately secured by means of gates, chains, berms, fences, etc. to prevent unauthorized access except when an operator is on duty.</p> <p>Verify that an attendant is on duty at all times while the landfill is open for public use to assure compliance with operational requirements and to prevent acceptance of unauthorized wastes.</p> <p>Verify that access roads are of all-weather construction and properly maintained.</p> <p>Verify that surface water is diverted from the working face and is not impounded over waste.</p> <p>Verify that solid waste is not disposed of in water.</p> <p>Verify that solid waste is not burned.</p>

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<p>SO.140.6.NC. Construction and demolition solid waste landfill (C&DLF) facilities must be permitted (15A NCAC 13B.0533 (a) and 0534 (b) (2)) [Added March 2007].</p>	<p>Verify that the concentration of explosive gases generated by the landfill do not exceed the following:</p> <ul style="list-style-type: none"> - 25 percent of the LEL for the gases in facility structures - the LEL for the gases at the property boundary. <p>Verify that leachate is properly managed onsite through the use of current best management practices.</p> <p>Verify that a sign is posted at the entrance showing the contact name and number in case of an emergency and the permit number.</p> <p>Verify that a new facility permit application is required when:</p> <ul style="list-style-type: none"> - the owner or operator proposes to establish a new facility not previously permitted by the Division. - the owner or operator proposes to expand a landfill facility. <p>(NOTE: A permit approves a facility plan for the life of the C&DLF facility and a set of plans for the initial phase of landfill development.)</p> <p>Verify that any proposed additional activities are submitted to the Division for review, approval, and permitting, as applicable, before construction and operation.</p> <p>Verify that all conditions of the permit are met, unless otherwise authorized by the Division.</p> <p>Verify that, in the event of noncompliance with the permit, all reasonable steps are taken to minimize releases to the environment and to prevent adverse impacts on human health or the environment.</p> <p>Verify that at all times all facilities and systems of treatment and control (and related appurtenances) are properly operated and maintained.</p> <p>(NOTE: Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.)</p>
<p>SO.140.7.NC. Construction and demolition solid waste landfill (C&DLF) facilities must have an operation plan (15A NCAC 13B.0542 (a) and (b)) [Added March 2007].</p>	<p>Verify that the owner or operator of a C&DLF unit maintains and operates the facility in accordance with an approved operation plan.</p> <p>(NOTE: The owner or operator of a C&DLF unit must prepare an operation plan for each phase of landfill development.)</p>

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SO.140.8.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet waste acceptance and disposal requirements (15A NCAC 13B.0542(c) through (e)) [Added March 2007].	<p>Verify that a C&DLF accepts only those solid wastes it is permitted to receive.</p> <p>Verify that the landfill owner or operator notifies the Division within 24 hours of attempted disposal of any waste the C&DLF is not permitted to receive, including waste from outside the area the landfill is permitted to serve.</p> <p>Verify that asbestos waste is managed:</p> <ul style="list-style-type: none"> - in accordance with 40 CFR 61 - is covered immediately with soil in a manner that will not cause airborne conditions - disposed of separate and apart from other solid wastes, as shown on Operation drawings. <p>Verify that wastewater treatment sludge is not accepted for disposal.</p> <p>(NOTE: Wastewater treatment sludge may be accepted, with the approval of the Division, for utilization as a soil conditioner and incorporated into or applied onto the vegetative growth layer.)</p> <p>Verify that the following wastes are not disposed of in a C&DLF unit:</p> <ul style="list-style-type: none"> - containers such as tubes, drums, barrels, tanks, cans, and bottles unless they are empty and perforated to ensure that no liquid, hazardous or municipal solid waste is contained - garbage - hazardous waste, also include hazardous waste from conditionally exempt small quantity generators - industrial solid waste unless a demonstration has been made and approved by the Division - liquid wastes - medical waste - municipal solid waste - polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761 - radioactive waste - septage - sludge - special wastes - white goods - yard trash. <p>Verify that the following wastes are not received if separate from C&DLF waste:</p> <ul style="list-style-type: none"> - lamps or bulbs including but not limited to halogen, incandescent, neon or fluorescent; lighting ballast or fixtures - thermostats and light switches - batteries including but not limited to those from exit and emergency lights and smoke detector

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<p>SO.140.9.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet cover requirements (15A NCAC 13B.0542 (f)) [Added March 2007].</p>	<ul style="list-style-type: none"> - lead pipes - lead roof flashing - transformers - capacitors - copper chrome arsenate (CCA) and creosote treated woods. <p>Verify that waste accepted for disposal in a C&DLF unit is readily identifiable as C&D waste and not shredded, pulverized, or processed to such an extent that the composition of the original waste cannot be readily ascertained.</p> <p>(NOTE: C&D waste that has been shredded, pulverized or otherwise processed may be accepted for disposal from a facility that has received a permit from an authorized regulatory authority which specifies such activities are inspected by the authority.)</p> <p>Verify that the owner or operator of a C&DLF does not knowingly dispose any type or form of C&D waste that is generated within the boundaries of a unit of local government that by ordinance:</p> <ul style="list-style-type: none"> - prohibits generators or collectors of C&D waste from disposing that type or form of C&D waste - requires generators or collectors of C&D waste to recycle that type or form of C&D waste. <p>Verify that the owners and operators of all C&DLF units cover the solid waste with 6 inches of earthen material when the waste disposal area exceeds one-half acre and at least once a week.</p> <p>Verify that cover is placed at more frequent intervals if necessary to control disease vectors, fires, odors, blowing litter, and scavenging.</p> <p>Verify that a notation of the date and time of the cover placement is recorded in the operating record.</p> <p>Verify that areas that will not have additional wastes placed on them for 3 months or more, but where final termination of disposal operations has not occurred, are covered and stabilized with vegetative ground cover or other stabilizing material.</p> <p>(NOTE: Alternative materials or an alternative thickness of cover may be approved by the Division if the owner or operator demonstrates that the alternative material or thickness controls disease vectors, fires, odors, blowing litter, and scavenging without presenting a threat to human health and the environment.)</p>
<p>SO.140.10.NC. Construction and demolition solid waste landfill (C&DLF) facilities</p>	<p>Verify that C&DLF units restrict solid waste into the smallest area feasible.</p>

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<p>must meet spreading and compacting requirements (15A NCAC 13B.0542 (g)) [Added March 2007].</p>	<p>Verify that solid waste is compacted as densely as practical into cells.</p> <p>Verify that an appropriate method, such as fencing and diking, is provided within the area to confine solid waste subject to being blown by the wind.</p> <p>Verify that, at the conclusion of each operating day, all windblown material resulting from the operation is collected and disposed of by the owner and operator.</p>
<p>SO.140.11.NC. Construction and demolition solid waste landfill (C&DLF) facilities must control disease vectors (15A NCAC 13B.0542 (h)) [Added March 2007].</p>	<p>Verify that all C&DLF units prevent or control on-site populations of disease vectors using techniques appropriate for the protection of human health and the environment.</p>
<p>SO.140.12.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet air criteria and fire control requirements (15A NCAC 13B.0542 (i)) [Added March 2007].</p>	<p>Verify that owners and operators of all C&DLF units ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP).</p> <p>Verify that open burning of solid waste, except for the approved burning of land clearing debris generated on-site or debris from emergency clean-up operations, is prohibited.</p> <p>Verify that a notation of the date of approval and the name of the Division personnel who approved the burning is included in the operating record.</p> <p>Verify that equipment is provided to control accidental fires and arrangements are made with the local fire protection agency to immediately provide fire-fighting services when needed.</p> <p>Verify that the occurrence of fires or explosions require verbal notice to the Division within 24 hours and written notification within 15 days.</p>
<p>SO.140.13.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet access and safety control requirements (15A NCAC 13B.0542 (j)) [Added March 2007].</p>	<p>Verify that the C&DLF is adequately secured by means of gates, chains, berms, fences and other security measures approved by the Division to prevent unauthorized entry.</p> <p>Verify that an individual trained in landfill operations is on duty at the site while the facility is open for public use and at all times during active waste management operations.</p> <p>Verify that the access road to the site and access roads to monitoring locations are</p>

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<p>SO.140.14.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet erosion and sedimentation control requirements (15A NCAC 13B.0542 (k)) [Added March 2007].</p>	<p>of all-weather construction and maintained in good condition.</p> <p>Verify that dust control measures are implemented.</p> <p>Verify that signs providing information on disposal procedures, the hours during which the site is open for public use, the permit number and other pertinent information specified in the permit conditions are posted at the site entrance.</p> <p>Verify that signs are posted that at a minimum list liquid, hazardous and municipal solid waste as being excluded from the C&DLF unit.</p> <p>Verify that traffic signs or markers are provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.</p> <p>Verify that the removal of solid waste from a C&DLF is prohibited unless the unit has included in its operational plan, a recycling program which has been approved by the Division.</p> <p>Verify that the general public is prohibited from removal activities on the working face.</p> <p>Verify that adequate sediment control measures consisting of vegetative cover, materials, structures or devices are utilized to prevent sediment from leaving the C&DLF facility and excessive on-site erosion.</p> <p>Verify that provisions for a vegetative ground cover sufficient to restrain erosion are accomplished as directed by appropriate state or local agency.</p>
<p>SO.140.15.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet drainage control and water protection requirements (15A NCAC 13B.0542 (l)) [Added March 2007].</p>	<p>Verify that surface water is diverted from the operational area.</p> <p>Verify that surface water is not impounded over or in waste.</p> <p>Verify that solid waste is not disposed of in water.</p> <p>Verify that leachate is contained on-site or treated prior to discharge.</p> <p>(NOTE: An NPDES permit may be required prior to the discharge of leachate to surface waters.)</p> <p>Verify that C&DLF units do not:</p> <ul style="list-style-type: none"> - cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act

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<p>SO.140.16.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet operating record and recordkeeping requirements (15A NCAC 13B.0542 (n)) [Added March 2007].</p>	<ul style="list-style-type: none"> - cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area-wide or State-wide water quality management plan. <p>Verify that the owner and operator of a C&DLF unit records and retains at the facility, or in an alternative location near the facility, the following information:</p> <ul style="list-style-type: none"> - records of random waste inspections, monitoring results, certifications of training, and training procedures - amounts by weight of solid waste received at the facility to include county of generation - any demonstration, certification, finding, monitoring, testing, or analytical data - any closure or post-closure monitoring, testing, or analytical data - any cost estimates and financial assurance documentation - notation of date and time of placement of cover material - all audit records, compliance records and inspection reports. <p>Verify that the operating record includes:</p> <ul style="list-style-type: none"> - a copy of the approved operation plan and the engineering plan - a copy of the current Permit to Construct and Permit to Operate - the Monitoring Plan, included as appendices to the Operation Plan.
<p>SO.140.17.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet closure requirements (15A NCAC 13B.0543 (a) and (c)) [Added March 2007].</p>	<p>Verify that the owner and operator develop specific plans for the closure and submits them to the Division for approval.</p> <p>Verify that C&DLF units install a cap system that is designed to minimize infiltration and erosion.</p> <p>Verify that prior to beginning closure of each C&DLF unit, an owner or operator notifies the Division that a notice of the intent to close the unit has been placed in the operating record.</p> <p>Verify that the owner and operator begins closure activities for that portion of each C&DLF unit meeting one or more of the following requirements, unless an extension has been granted by the Division:</p> <ul style="list-style-type: none"> - no later than 30 days after the date on which the C&DLF unit receives the known final receipt of wastes - no later than 30 days after the date that a 10 acre or greater area of waste, is within 15 feet of final design grades - no later than one year after the most recent receipt of wastes, if the C&DLF unit has remaining capacity. <p>Verify that the owner and operator of all C&DLF units completes closure</p>

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<p>SO.140.18.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet post-closure requirements (15A NCAC 13B.0543 (a) and (e)) [Added March 2007].</p>	<p>activities of each C&DLF unit in accordance with the closure plan within 180 days following the beginning of closure.</p> <p>Verify that following closure of each C&DLF unit, the owner or operator notifies the Division that a certification, signed by the project engineer verifying that closure has been completed in accordance with the closure plan, has been placed in the operating record.</p> <p>Verify that following closure of all C&DLF units, the owner or operator records a notation on the deed to the landfill facility property at the local county Register of Deeds office, or some other instrument that is normally examined during title search, and notifies the Division that the notation has been recorded and a copy has been placed in the operating record.</p> <p>(NOTE: The owner or operator may request permission from the Division to remove the notation from the deed if all wastes are removed from the facility.)</p> <p>Verify that the owner and operator develop specific plans for the post-closure and submits them to the Division for approval.</p> <p>Verify that following closure of each C&DLF unit, the owner and operator conducts post-closure care.</p> <p>Verify that post-closure care is conducted for 30 years and consists of at least the following:</p> <ul style="list-style-type: none"> - maintaining the integrity and effectiveness of any cap system including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the cap system - monitoring the ground water and surface water and maintaining the ground-water monitoring system, if applicable - maintaining and operating the gas monitoring system - maintaining, operating and decommissioning the leachate collection system, if present. <p>NOTE: The length of the post-closure care period may be decreased by the Division if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Division; or increased by the Division if the Division determines that the lengthened period is necessary to protect human health and the environment.)</p> <p>Verify that following completion of the post-closure care period for each C&DLF unit, the owner or operator notifies the Division that a certification, signed by a registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure plan, has been placed in the operating record.</p>

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<p>SO.140.19.NC. Construction and demolition solid waste landfill (C&DLF) facilities must have a ground-water monitoring plan (15A NCAC 13B.0544 (a), (f) through (j)) [Added March 2007].</p>	<p>Verify that monitoring plans are submitted to the Division for review.</p> <p>Verify that a copy of the approved monitoring plan is placed in the operating record.</p> <p>Verify that the monitoring plan contains the following information and applies to all C&DLF units:</p> <ul style="list-style-type: none"> - a ground-water monitoring plan (see SO.140.20.NC.) - a gas control plan (see SO.140.21.NC.) - a waste acceptability program (see SO.140.22.SC.) <p>Verify that the monitoring plan includes any other monitoring plan or program that is necessary according to the Operating Plan or the effective permit.</p> <p>Verify that monitoring plans are certified by a licensed geologist or professional engineer to be effective in providing early detection of any release of hazardous constituents from any point in a disposal cell or leachate surface impoundment to the uppermost aquifer, air, surface waters, or proximal area.</p> <p>Verify that, once established at a C&DLF facility, all monitoring are conducted throughout the active life and post-closure care period for all C&DLF units.</p>
<p>SO.140.20.NC. Construction and demolition solid waste landfill (C&DLF) facilities must have a water monitoring plan (15A NCAC 13B.0544 (b) and (c)) [Added March 2007; Revised March 2008].</p>	<p>Verify that a ground-water monitoring plan is submitted to the Department.</p> <p>Verify that, at a minimum, the detection monitoring program include monitoring for the following:</p> <ul style="list-style-type: none"> - constituents listed in Appendix I of 40 CFR Part 258 - mercury - chloride - manganese - sulfate - iron - specific conductance - pH - temperature - alkalinity - total dissolved solids. <p>Verify that the monitoring frequency for all detection monitoring constituents is at least semiannual during the active life of the facility, and during the closure and post-closure periods.</p> <p>Verify that a ground-water monitoring system is installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield</p>

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SO.140.21.NC. Construction and demolition solid waste landfill (C&DLF) facilities must have a gas control plan (15A NCAC 13B.0544 (d)) [Added March 2007].	<p>ground-water samples from the aquifer.</p> <p>Verify that owners and operators obtain approval from the Division for the design, installation, development, and decommission of any monitoring well or piezometer.</p> <p>Verify that all documentation is placed in the operating record.</p> <p>Verify that the monitoring wells and piezometers are operated, maintained, and accessible so that they perform to design specifications throughout the life of the monitoring program.</p> <p>Verify that, within 120 days of completing a ground-water sampling event, the owner or operator submits to the Division, a report including the following information from the sampling event:</p> <ul style="list-style-type: none"> - field observations relating to the condition of the monitoring wells - field data - summary of the laboratory data - field sampling quality assurance and quality control data - information on ground-water flow direction - ground-water flow rate for each well with constituents that exceed ground-water standards over background levels - any other pertinent information related to the sampling event. <p>(NOTE: The Division may require or allow the use of alternative monitoring systems in addition to ground-water monitoring wells. The Division may require a solid waste management facility to provide surface water monitoring capability as the Division determines to be necessary to detect the effects of the facility on surface water in the area.)</p>
	<p>Verify that owners and operators of all C&DLF units ensure that:</p> <ul style="list-style-type: none"> - the concentration of methane gas or other explosive gases generated by the facility does not exceed 25 percent of the lower explosive limit in on-site facility structures (excluding gas control or recovery system components) - the concentration of methane gas or other explosive gases does not exceed the lower explosive limit for methane or other explosive gases at the facility property boundary - the facility does not release methane gas or other explosive gases in any concentration that can be detected in offsite structures. <p>Verify that owners and operators of all C&DLF units implement a routine methane monitoring program to ensure that the above standards are met.</p> <p>Verify that the frequency of monitoring is quarterly or as approved by the Division.</p>

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<p>SO.140.22.NC. Construction and demolition solid waste landfill (C&DLF) facilities must have a waste acceptability program (15A NCAC 13B.0544 (e)) [Added March 2007].</p>	<p>Verify that, if methane or explosive gas levels exceeding the limits are detected, the owner and operator does the following:</p> <ul style="list-style-type: none"> - immediately takes all steps necessary to ensure protection of human health and notifies the Division - within 7 days of detection, places in the operating record the methane or explosive gas levels detected and a description of the steps taken to protect human health - within 60 days of detection, implements a remediation plan for the methane or explosive gas releases, places a copy of the plan in the operating record, and notifies the Division that the plan has been implemented. <p>(NOTE: The Division may establish alternative schedules for demonstrating compliance.)</p> <p>(NOTE: Lower explosive limit means the lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25 C and atmospheric pressure.)</p> <p>(NOTE: See SO.140.7.NC. for applicability.)</p> <p>Verify that owners and operators of all C&DLF units implement a program at the facility for detecting and preventing the disposal of industrial, hazardous, liquid, municipal solid waste and excluded wastes in accordance with the Operating Plan or the effective permit.</p> <p>Verify that this program includes, at a minimum:</p> <ul style="list-style-type: none"> - random inspections of incoming loads or other comparable procedures - records of any inspections - training of facility personnel to recognize industrial, hazardous, liquid, municipal and excluded waste - development of a contingency plan to properly manage any identified industrial hazardous, liquid, municipal or excluded waste - address identification, removal, storage and final disposition of the waste.
<p>SO.140.23.NC. Construction and demolition solid waste landfill (C&DLF) facilities must meet assessment and corrective action requirements (15A NCAC 13B.0545 (a) and (m)) [Added March 2007].</p>	<p>(NOTE: See SO.140.7.NC. for applicability.)</p> <p>Verify that, if one or more constituents (see SO.140.20.SC.) are detected above the current ground-water quality standards in any sampling event, the owner and operator immediately does the following:</p> <ul style="list-style-type: none"> - installs at least one additional groundwater monitoring well or methane gas monitoring well at the facility boundary or the compliance boundary in the direction of contaminant migration - notifies all persons who own land or reside on land that directly overlies any

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<p>SO.140.24.NC. Existing construction and demolition solid waste landfill (C&DLF) facilities as of January 1, 2007 on top of closed MSWLFs must submit a permit application by July 1, 2008 (15A NCAC 13B.0547(4)) [Added March 2007].</p>	<p>part of the plume of contamination if contaminants have migrated off-site or are thought to have migrated off site</p> <ul style="list-style-type: none"> - within 30 days of triggering an assessment monitoring program, the owner and operator submits an assessment monitoring work plan for Division review - upon Departmental approval, the approved assessment monitoring work plan is placed in the operation record, and all appropriate local government officials are notified. <p>Verify that, upon completion of the correction action, the owner and operator submits a report to the Division documenting that the remedy has been completed.</p> <p>Verify that the report is signed by the owner and by a Licensed Geologist or Professional Engineer.</p> <p>Verify that, upon approval by the Division, the report is placed in the operating record.</p> <p>Verify that owners and operators of existing C&DLF units on top of closed MSWLFs submit a permit application by July 1, 2008, for the continued operations of those units.</p> <p>(NOTE: The permit must be reviewed at the end of each five-year period.)</p>

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<p>SO.145.</p> <p>INCINERATORS</p> <p>SO.145.1.NC. Solid waste incinerators must have an operating permit (15A NCAC 13B.0508).</p> <p>SO.145.2.NC. Solid waste incinerators must meet operational requirements (15A NCAC 13B.0509) [Revised March 2007].</p>	<p>Verify that solid waste incinerators have an operating permit.</p> <p>Verify that all incinerators are designed and operated in a manner so as to prevent the creation of a nuisance or potential health hazard.</p> <p>Verify that the incinerator is situated, equipped, operated, and maintained to minimize interference with other activities in the area.</p> <p>Verify that all solid waste to be disposed of at the site is confined to the dumping area and adequate storage facilities are provided.</p> <p>Verify that effective vector control measures are applied to control flies, rodents, and other insects or vermin.</p> <p>Verify that equipment is provided in the storage and charging areas and elsewhere as needed or as may be required in order to maintain a sanitary condition.</p> <p>Verify that all residue from the incinerator is promptly disposed of at an approved sanitary landfill site.</p> <p>Verify that an air quality permit issued by the Division of Environmental Management, Department of Environment, Health, and Natural Resources, is obtained prior to operation (see Air Emissions Management).</p> <p>Verify that a site only accepts those solid wastes, which it is permitted to receive.</p> <p>Verify that water coming into contact with solid waste is contained onsite or properly treated prior to discharge.</p> <p>(NOTE: An NPDES permit may be required prior to discharge to surface waters.)</p>

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<p>SO.160.</p> <p>WASTE TIRE MANAGEMENT</p> <p>SO.160.1.NC. Waste tire generators must dispose of scrap tires only at a permitted facility (15A NCAC 13B.1103, 13B.1104 (a), and 13B.1105 (f)) [Revised March 1998; Revised March 2008].</p> <p>SO.160.2.NC. Scrap tire disposal facilities must meet notification, recordkeeping, and operational requirements (15A NCAC 13B.1104(c) and 13B.1107 (2) (i) through (k)) [Revised March 1998].</p>	<p>Verify that a generator of scrap tires discards, deposits, or disposes of a scrap tire only at a site or facility permitted to receive scrap tires, or at a legitimate business exempt from a permit.</p> <p>Verify that landfilling of whole scrap tires is prohibited.</p> <p>(NOTE: A permitted sanitary landfill, other than a demolition landfill, is deemed permitted as a scrap tire disposal site.)</p> <p>Verify that the tire collector notifies the Division of its operation by submitting a form giving complete information regarding the location, size, period of operation, ownership and operation of the site, and the number of scrap tires accumulated at the site.</p> <p>Verify that all scrap tire collection, processing, or disposal sites storing scrap or processed tires outdoors prepare and keep an emergency preparedness manual at the site which is updated at least once a year, upon changes in operations, or as required by the Department.</p> <p>Verify that the emergency preparedness manual contains the following elements:</p> <ul style="list-style-type: none"> - list of names and numbers of persons to be contacted in the event of a fire, flood, or other emergency - list of the emergency response equipment at the site, its location, and how it should be used in the event of a fire or other emergency - description of procedures to be followed in the event of a fire, including procedures to contain and dispose of the oily material generated by combustion of large numbers of tires - listing of all hazardous materials stored onsite, their locations, and information regarding precautions which should be taken with them. <p>Verify that all scrap tire collection, processing, or disposal sites storing scrap or processed tires outdoors comply with the following notification and recordkeeping standards:</p> <ul style="list-style-type: none"> - the Division is notified immediately in the event of a fire or other emergency if that emergency has potential offsite effects - within 2 weeks of an emergency involving potential offsite impact, a written report is submitted to the Division describing the cause(s) of the emergency, actions taken, results of actions taken, and an analysis of the success or failure of these actions

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<p>SO.160.3.NC. Scrap tire disposal facilities must meet storage requirements (15A NCAC 13B.1107 (1), (2) (a) through (h), and (3)).</p>	<ul style="list-style-type: none"> - the following records are maintained: <ul style="list-style-type: none"> - a copy of the permit with required attachments - records of the quantity of scrap and processed tires received, stored, and shipped from the site, including the destination - all certification forms applicable to any tires received, stored, or shipped from the site. <p>Verify that scrap tires stored indoors are stored under conditions meeting those in <i>The Standard for Storage of Rubber Tire</i>, National Fire Protection Association 231D-1986 edition, which has been adopted in accordance with GS 150B-14(c).</p> <p>Verify that all scrap tire collection, processing, or disposal sites storing scrap or processed tires outdoors comply with the following operational standards:</p> <ul style="list-style-type: none"> - whole scrap tires are placed in an outdoor scrap tire pile with dimensions no greater than 200 ft in length, 50 ft in width, and 15 ft in height - a 50-ft wide fire lane is placed around the perimeter of each scrap tire pile - access to the fire lane for emergency vehicles is unobstructed and passable at all times - mosquitoes and rodents are controlled so as to protect public health and welfare - whole and sliced scrap tires and other scrap tires capable of holding water are covered upon receipt with a water shedding material or are disposed of, processed, or removed from the site within 10 days of receipt - if the scrap tire collection site receives tires from persons other than the operator of the site, a sign is posted at the entrance stating the operating hours and the attendant is present when the site is open for receipt of tires - no operations involving the use of open flames, blow torches, or highly flammable substances are conducted within 50 ft of a scrap tire pile - a fire safety survey is conducted annually by local fire protection authorities or other persons as approved by the Division - communication equipment is maintained to assure that the site operator can contact local fire protection authorities in case of a fire - scrap tire storage areas are kept free of grass, underbrush, and other potentially flammable vegetation at all times - the number of scrap tires stored at a collection site does not exceed the stated number of scrap tires shipped offsite per mo plus the stated number of scrap tires disposed of onsite per month, unless otherwise specified by the Division - at no time are more than 60,000 scrap tires stored at a scrap tire collection site. <p>Verify that processed tires are stored in accordance with the requirements of indoor or outdoor storage and in accordance with the following:</p> <ul style="list-style-type: none"> - the temperature of any aboveground piles of compacted, processed tires over 1000 yd³ in size is monitored and temperature control measures are instituted so that pile temperatures do not exceed 300 deg F - any residuals from a scrap tire collection site are managed so as to be

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<p>SO.160.4.NC. Nonconforming scrap tire disposal facilities must close (15A NCAC 13B.1109).</p>	<p>contained onsite, and are controlled and disposed of in a permitted solid waste management facility or properly recycled.</p> <p>Verify that any scrap tire collection or disposal site which does not meet the requirements of this section is closed.</p> <p>Verify that, in closing any scrap tire site, the following steps are taken:</p> <ul style="list-style-type: none"> - public access to the site is prevented - a notice is posted indicating the site is closed and the nearest permitted site where scrap tires can be deposited - the Division is notified of the closing and Departmental approval of the plan to remove tires is obtained prior to tire removal - all scrap tires, processed tires, and residuals are removed to a waste tire processing facility, solid waste management facility permitted to accept scrap tires or processed tires, a legitimate user of processed tires, or other facility approved by the Division - any solid waste is removed to a permitted solid waste management facility - documentation that tires were received by the approved facility is provided - the Department is notified when closure is complete.
<p>SO.160.5.NC. A scrap tire processing facility must meet specific permitting and operating requirements (15A NCAC 13B.1110 (a) and (b)) [Revised March 1998].</p>	<p>Verify that scrap tire collection sites permitted in association with scrap tire processing facilities are permitted and operated in accordance with the operating provisions for scrap tire disposal facilities.</p> <p>Verify that the storage limit is determined by multiplying the daily throughput of the processing equipment used by 30.</p> <p>Verify that a scrap tire processing facility does not accept any scrap tires for processing above the number, which can be processed, daily if it has reached its storage limit.</p> <p>Verify that processed tires stored for recycling or disposal are subject to storage requirements for scrap tire disposal facilities, unless otherwise authorized by the Department.</p> <p>Verify that at least 75 percent of both the scrap tires and processed tires delivered to or maintained on the site of the facility are processed and removed for recycling or disposal at a permitted solid waste management facility within one year of their receipt.</p> <p>Verify that wastes resulting from the operation of a scrap tire processing facility is evaluated in accordance with 10 NCAC 10G.0103 (e) prior to disposal.</p>

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SO.160.6.NC. A scrap tire processing facility must meet specific recordkeeping and reporting requirements (15A NCAC 13B.1110(c) and (d)) [Revised March 1998].	<p>Verify that the following information is recorded and maintained for 3 yr and is available for inspection by Division personnel during normal business hours:</p> <ul style="list-style-type: none"> - for all scrap and processed tires shipped from the facility: <ul style="list-style-type: none"> - hauler or merchant identification number of the tire hauler who accepted the scrap or processed tires for transport - the quantity of scrap or processed tires shipped with that hauler - destination of scrap or processed tires - documentation of receipt of tires by the receiving facility - for all scrap and processed tires received at the facility: <ul style="list-style-type: none"> - name of the hauler - hauler or merchant identification number of the scrap tire hauler who delivered the scrap or processed tires to the facility - the quantity of scrap or processed tires received from that hauler - where the tires originated (name and address of facility) - for tires received, stored, shipped, or processed, completed certification forms, except for quantities of 5 tires or less brought for processing by someone other than a tire collector, tire processor, or tire hauler. <p>Verify that an annual report is submitted, on a form prescribed and provided by the Division, to the Division by 1 March of each year summarizing the information collected for the previous calendar year.</p> <p>Verify that minimally the following information is included:</p> <ul style="list-style-type: none"> - facility name, address, and permit number, if any - year covered by the report - total quantity and type of scrap tires or processed tires received at the facility during the year covered by the report - total quantity and type of scrap or processed tires shipped from the facility during the year covered by the report - quantity of scrap or processed tires shipped to each receiving facility identified by name and address - total quantity and type of scrap or processed tires located at the facility on the first day of the calendar year.
SO.160.7.NC. Haulers of scrap and/or processed tires for storage, processing, or disposal must meet specific requirements (15A NCAC 13B.1112 (1)).	<p>Verify that a copy of the document assigning the scrap tire registration number or merchant identification number is carried at all times while engaged in hauling scrap tires.</p>
SO.160.8.NC. A scrap tire collection site or scrap tire disposal site must obtain a	<p>Verify that a scrap tire collection site or scrap tire disposal site is not established, operated or maintained unless a permit for the site has been obtained from the</p>

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<p>permit and meet operational requirements (15A NCAC 13B.1105(a), (f), and (g), 13B.1108, and NCGSA 130A-309.57) [Added March 2008].</p>	<p>Division.</p> <p>(NOTE: A permit is not required for:</p> <ul style="list-style-type: none"> - a tire retreading business where fewer than 1,000 scrap tires are kept on the business premises - a business that, in the ordinary course of business, removes tires from motor vehicles if fewer than 1,000 of these tires are kept on the business premises - a retail tire-selling business which is serving as a scrap tire collection center if fewer than 1,000 scrap tires are kept on the business premises.) <p>(NOTE: A permitted sanitary landfill, other than a demolition landfill, is deemed permitted as a scrap tire disposal site. A permitted sanitary landfill operated by a unit of local government is deemed permitted as a scrap tire collection site and may store up to 25,000 scrap tires for the purpose of comprising a marketable commodity.)</p> <p>Verify that any scrap tire disposal site is permitted and operated in accordance with the provisions for siting and operations outlined for landfills.</p> <p>Verify that a scrap tire monofill is not located in any required buffer zone.</p> <p>Verify that scrap tires are not burned in a permitted solid waste incinerator without a permit modification from the Division.</p> <p>Verify that a copy of the permit and required attachments is maintained in-state at the owner's principal place of business.</p> <p>Verify that records of the quantity of scrap tires and processed tires received and disposed of at the site and all certification forms applicable to any tires received and disposed at the site are maintained for 3 yr.</p>

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SO.165. YARD WASTE/ COMPOSTING SO.165.1.NC. [Deleted March 1998] SO.165.2.NC. [Deleted March 1998]. SO.165.3.NC. [Deleted March 1998]. SO.165.4.NC. [Deleted March 1998]. SO.165.5.NC. [Deleted March 1998]. SO.165.6.NC. [Deleted March 1998]. SO.165.7.NC. Municipal solid waste compost facilities must have a permit (15A NCAC 13B.1401 (a), and 13B.1402 (a) and (b), 13B.1403, and 13B.1406 (1)) [Revised March 1998; Revised March 2007].	<p>Verify that facilities that produce compost from solid waste or solid waste co-composted with other wastes obtain a permit from the Division.</p> <p>(NOTE: This checklist item applies to compost facilities that compost solid waste or solid waste with sludges that are not classified as a solid waste, functioning as a nutrient source. This checklist item does not apply to compost facilities which compost sludge with municipal solid waste functioning only as a bulking agent.)</p> <p>Verify that hazardous waste, asbestos containing waste, or household hazardous waste is not processed into compost.</p> <p>Verify that household hazardous waste is not accepted by a facility, except in an area designated by facility site plans for storage, and is not processed into</p>

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<p>SO.165.8.NC. Municipal solid waste compost facilities must meet specific siting requirements (15A NCAC 13B.1404 (a) and (b)) [Revised March 1998; Revised March 2007].</p>	<p>compost.</p> <p>Verify that construction plans and conditions of the permit are followed.</p> <p>Verify that a copy of the permit, plans and operational reports are maintained on site at all times.</p> <p>Verify that a site located in a floodplain does not restrict the flow of the 100-yr flood, reduce the temporary storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human life, wildlife, land, or water resources.</p> <p>Verify that for Type 1 and 2 facilities, a 50-foot minimum buffer is maintained between all property lines and compost areas and, for Type 3 and 4 facilities, a 100-foot minimum buffer.</p> <p>Verify that a 500-foot minimum buffer is maintained between compost areas and residences or dwellings not owned and occupied by the permittee, except that Type 1 and Small Type 2 and 3 facilities, a 200-foot minimum buffer is maintained.</p> <p>Verify that a 100-foot minimum buffer is maintained between all wells and compost areas, except monitoring wells.</p> <p>Verify that a 50 foot minimum buffer is maintained between perennial streams/rivers and compost areas.</p> <p>Verify that all portions of any compost facility located over a closed-out disposal area are designed with a pad adequate to protect the disposal area cap from being disturbed and there is no runoff from the pad onto the cap or side slopes of the closed out area.</p> <p>Verify that a 25-foot minimum distance is maintained between compost areas and swales or berms to allow for adequate access of fire fighting equipment.</p> <p>Verify that a site meets the following surface water requirements:</p> <ul style="list-style-type: none"> - does not cause a discharge of materials or fill materials into waters or wetlands of the state - does not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES) - does not cause non-point source pollution of waters of the state that violates assigned water quality standards. <p>Verify that a site meets the following groundwater requirements:</p> <ul style="list-style-type: none"> - does not contravene groundwater standards

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	<ul style="list-style-type: none"> - portions of a site used for waste receipt and storage, active composting, and curing have a soil texture finer than loamy sand and the depth to the seasonal high water table is maintained at least 12 inches for a Type 1 or 2 facility and 24 inches for a Type 3 facility, unless a pad is provided - a pad is provided for portions of a Type 4 facility used for waste receiving and storage, active composting, and curing. <p>(NOTE: A pad is not required for storage of finished product that is dried so as to pass the Paint Filter Liquids Test (EPA Method 9095), and for which the storage area is prepared in such a manner that water does not collect around the base of the stored material, and where the depth to the seasonal high watertable is maintained at least 12 inches.)</p> <p>(NOTE: Alternative minimum buffers or requirements may be increased if deemed necessary by the Division in order to protect public health and the environment or to prevent the creation of a nuisance.</p>
SO.165.9.NC. Municipal solid waste compost facilities must meet specific design requirements (15A NCAC 13B.1404(c)) [Revised March 1998; Revised March 2007].	<p>Verify that a site does not allow uncontrolled public access.</p> <p>Verify that a site meets the requirements of the Sedimentation Pollution Control Law (15A NCAC 4).</p> <p>Verify that a site meets the requirements of the Air Pollution Control Requirements (15A NCAC 2D) to minimize fugitive emissions and odors.</p> <p>Verify that a site is designed to minimize odors at the property boundary.</p>
SO.165.10.NC. Municipal solid waste compost facilities must meet specific operational requirements (15A NCAC 13B.1406 (6), and (10) through (14)) [Revised March 1998; Revised March 2007].	<p>Verify that a site only accepts those solid wastes which it is permitted to receive.</p> <p>Verify that compost process at Type 1 facilities are maintained at or above 55 degree Celsius (131 degrees F) 3 days and aerated to maintain elevated temperatures.</p> <p>Verify that Types 2, 3 and 4 facilities meet one of the following requirements:</p> <ul style="list-style-type: none"> - maintain the compost process at a temperature above 40 degrees Celsius (104 degrees F) for 14 days or longer and the average temperature for that time is higher than 45 degrees Celsius (113 degrees F) - meet the vector attraction reduction requirements in 40 CFR 503.33(b) (4) or (7). <p>(NOTE: The composting process qualifies as a process to further reduce pathogens for all Type 3 and Type 4 facilities.)</p> <p>(NOTE: The following are acceptable methods:</p> <ul style="list-style-type: none"> - the windrow composting method

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<p>SO.165.11.NC. Municipal solid waste compost facilities must meet specific erosion and water control requirements (15A NCAC 13B.1406 (2) through (4)) [Revised March 1998; Revised March 2007].</p>	<ul style="list-style-type: none"> - the static aerated pile composting method - the within-vessel composting method.) <p>Verify that nitrogen bearing wastes are incorporated as necessary to minimize odor and the migration of nutrients.</p> <p>Verify that non-compostable solid waste and unacceptable compost is disposed in a solid waste management facility permitted to receive the particular type of waste.</p> <p>Verify that the amount of compost stored at the facility does not exceed the designed storage capacity.</p> <p>Verify that the finished compost meet the classification and distribution requirements outlined in Appendix 9-1.</p> <p>Verify that adequate erosion control measures are practiced to prevent on-site erosion and to control the movement of silt or contaminants from the site.</p> <p>Verify that surface water is diverted from the operational, compost curing, and storage areas.</p> <p>Verify that leachate contained on site is treated to meet standards for the off-site disposal method.</p>
<p>SO.165.12.NC. Municipal solid waste compost facilities must meet specific access and safety requirements (15A NCAC 13B.1406 (5), (7), and (8)) [Revised March 1998; Revised March 2007].</p>	<p>Verify that a large site is secured by means of gates, chains, berms, fences, or other security measures approved by the Division, to prevent unauthorized entry.</p> <p>Verify that an operator is on duty at the site at all times while the facility is open for public use to ensure compliance with operational requirements and access to the facility is controlled.</p> <p>Verify that the access road to the site is of all-weather construction and maintained in good condition.</p> <p>Verify that open burning of solid waste is prohibited.</p> <p>Verify that equipment is provided to control accidental fires and arrangements made with the local fire protection agency to immediately provide fire-fighting services when needed.</p> <p>Verify that all employees are trained in site specific safety, remedial, and corrective action procedures.</p> <p>Verify that signs posted at the site entrance provide information on:</p>

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<p>SO.165.13.NC. Municipal solid waste compost facilities must meet reporting and monitoring requirements (15A NCAC 13B.1406 (9)) [Revised March 2007].</p> <p>SO.165.14.NC. Type 2, 3 and 4 municipal solid waste compost facilities must meet testing requirements (15A NCAC 13B.1408 (a)) [Revised March 1998; Revised March 2007].</p>	<ul style="list-style-type: none"> - dumping procedures - hours during which the site is open for public use - the permit number - other pertinent information. <p>Verify that traffic signs/markers are provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.</p> <p>Verify that signs are posted stating that no hazardous waste, asbestos- containing waste, or medical waste can be received at the site.</p> <p>Verify that specified monitoring and reporting requirements are met.</p> <p>Verify that the temperature of all compost produced is monitored sufficiently to ensure the pathogen reduction criteria are met.</p> <p>Verify that a composite sample of the compost produced at each compost facility is analyzed at intervals of every 20,000 tons of compost produced or every 6 months, whichever comes first, for test parameters for the Type of facility as designated in Appendix 9-2.</p> <p>Verify that sample collection, preservation, and analysis assure valid and representative results.</p> <p>Verify that at least 3 individual samples (of equal volume) are taken from each batch produced in separate areas along the side of the batch.</p> <p>Verify that each sampling point is at a depth of 2 to 6 ft into the pile from the outside surface of the pile.</p> <p>Verify that samples that have been analyzed for metals are composted and accumulated over a 6 mo period or at intervals of every 20,000 tons of product, whichever comes first.</p> <p>Verify that any sample collected for testing for pathogens and nutrients is a representative composite sample of the compost and is processed within a period of time required by the testing procedure.</p> <p>Verify that compost containing sewage sludge is tested in accordance with 40 CFR 503, Subpart B.</p> <p>(NOTE: The Division may decrease or increase the parameters to be analyzed or the frequency of analysis based on monitoring date, changes in the waste stream</p>

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<p>SO.165.15.NC. Municipal solid waste compost facilities must meet recordkeeping requirements (15A NCAC 13B.1408 (b)) [Added March 2007].</p>	<p>or processing, or information regarding the potential for presence of toxic substances that are not on the list of monitoring parameters.)</p> <p>Verify that foreign matter content is determined by passing a dried, weighed sample of the compost product through a one-quarter inch screen.</p> <p>Verify that the material remaining on the screen is visually inspected, and the foreign matter that can be clearly identified is separated and weighed.</p> <p>Verify that all facility owners or operators record and maintain records for a minimum of 5 years.</p> <p>Verify that daily operational records are maintained, including, at a minimum:</p> <ul style="list-style-type: none"> - temperature data (length of the composting period) - quantity of material processed - analytical results on compost testing - the quantity, type and source of waste received - the quantity and type of waste processed into compost - the quantity and type of compost produced by product classification - the quantity and type of compost removed for use or disposal, by product classification, and the market or permitted disposal facility.
<p>SO.165.16.NC. Municipal solid waste compost facilities must submit annual reports (15A NCAC 13B.1408 (c)) [Added March 2007].</p>	<p>Verify that an annual report for the period July 1 to June 30 is submitted by all facility owners or operators to the Division every August 1.</p> <p>Verify that annual report contains:</p> <ul style="list-style-type: none"> - the facility name, address, and permit number - the total quantity in tons, with sludge values expressed in dry weight, and type of waste received at the facility during the year covered by the report, including tons of waste received from local governments of origin - the total quantity in tons, with sludge values expressed in dry weight, and type of waste processed into compost during the year covered by the report - the total quantity in tons and type of compost produced at the facility, by product classification, during the year covered by the report - the total quantity in tons and type of compost removed for use or disposal from the facility, by product classification, along with a general description of the market if for use during the year covered by the report - monthly temperature monitoring - results of tests. <p>Verify that yearly totals of solid waste received and composted are reported back to the local government of origin for annual recycling reporting.</p>

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<p>SO.175.</p> <p>OTHER TREATMENT/ PROCESSING UNITS</p> <p>SO.175.1.NC. A solid waste treatment and processing facility must meet specific operating requirements (15A NCAC 13B.0302).</p>	<p>(NOTE: See definition of treatment and processing facility.)</p> <p>Verify that the treatment and processing facility is operated in accordance with its approved operational plan.</p> <p>Verify that only wastes are accepted which the treatment and processing facility is permitted to receive.</p> <p>Verify that water coming in contact with solid waste is contained onsite or properly treated prior to discharge.</p> <p>Verify that emergency equipment for fire control is available.</p> <p>Verify that effective vector control measures are applied to control flies, rodents, and other insects or vermin.</p> <p>Verify that equipment is provided in storage and charging areas and elsewhere as needed or as may be required in order to maintain the facility in a sanitary condition.</p> <p>Verify that appropriate methods are provided to confine material subject to blowing.</p> <p>Verify that, at the conclusion of each day of operation, all windblown material resulting from the operation is collected and returned to the area.</p>

Appendix 9-1

Classification and Distribution of Solid Waste Compost Products (15A NCAC 13B.1407) [Added March 2007]

(a) Compost shall not be applied to the land or sold or given away if the concentration of any metal exceeds the concentration in 40 CFR 502.13(b) (3) [See Table 1 below], unless the concentration of all metals are less than the values in 40 CFR 503.13(b) (1) and records are maintained to show compliance with the cumulative and annual metal levels in 40 CFR 503.13(b) (2) and (4).

TABLE 1	
Metals	Concentration mg per kg
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2800

(b) Solid Waste shall be classified based on Table 2:

TABLE 2			
Grade	Manmade Inerts percent dry wt. of inerts	Pathogen Reduction	Metal Concentration
A	<= 6	PFRP	Table 1
B	> 6	NA	40 CFR 503.13(b)(1)

(c) Man made inerts shall not exceed 1 inch in size.

(d) Distribution of the defined grades shall be as follows:

- (1) Grade A compost shall have unlimited, unrestricted distribution. This product may be distributed directly to the public;
- (2) Grade B compost shall be restricted to distribution for land and mine reclamation, silviculture, and agriculture (on non-food chain crops) projects; and
- (3) Compost or mulch that is produced at a Type 1 facility and that contains minimal pathogenic organisms, is free from offensive odor, and contains no sharp particles that would cause injury to persons handling the compost, shall have unrestricted applications and distributions if directions are provided with the compost product.

(e) Solid waste compost products may not be distributed or marketed until the permittee has provided adequate test data to the Division as outlined in Rule .1408 of this Section. Within 30 days of receipt of the test data, the Division shall approve or deny the distribution and marketing of the product based upon the compost classification and distribution scheme. As long as the test data required in Rule .1408 of this Section continues to verify that compost is produced to the specifications of this Rule, the Division's approval to distribute the compost shall be ongoing.

(f) The applicant is responsible for meeting any applicable requirements of the North Carolina Department of Agriculture, Fertilizer Section concerning the distribution of this product.

(g) If the owner intends to distribute the product, the owner shall provide instructions to the user on any restrictions on use and recommended safe uses and application rates. The following information shall be provided on a label or an information sheet and a copy of the label or information sheet shall be submitted to the Solid Waste Section:

- (1) Classification grade as outlined in Paragraph (d) of this Rule;
- (2) Recommended uses;
- (3) Application rates;
- (4) Restrictions on usage; and
- (5) Total N (for products containing sludge).

Appendix 9-2

Test Parameters for Type 2, 3 and 4 Municipal Solid Waste Compost Facilities (15A NCAC 13B.1408, Table 3) [Added March 2007]

PARAMETER	UNIT	FACILITY	TEST METHOD
Foreign Matter	percent	all	see SO.165.14.NC.)
Arsenic	mg/kg dry wt.	Type 4	See Appendix A
Cadmium	mg/kg dry wt.	all	
Chromium	mg/kg dry wt.	Type 4	
Copper	mg/kg dry wt.	all	
Lead	mg/kg dry wt.	all	
Mercury	mg/kg dry wt.	Type 4	
Nickel	mg/kg dry wt.	all	
Selenium	mg/kg dry wt.	Type 4	
Zinc	mg/kg dry wt.	all	
Pathogens	See Appendix B	all	See Appendix B
Total N	percent	see*	Kjeldahl

SECTION 10

STORAGE TANK MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Storage Tank Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Definitions

- *Average Daily Throughput* - annual throughput of gasoline divided by 312 days per yr (15A NCAC 2D.0926).
- *Bottom Filling* - the filling of a tank truck or stationary storage tank through an opening that is flush with the tank bottom (15A NCAC 2D.0926).
- *Bulk Gasoline Plant* - a gasoline storage and distribution facility that has an average daily throughput of less than 20,000 gal of gasoline and that usually receives gasoline from bulk terminals by trailer transport, stores it in tanks, and subsequently dispenses it via account trucks to local farms, businesses, and service stations (15A NCAC 2D.0926 and 2D.0932) [Citation Revised March 2008].
- *Bulk Gasoline Terminal* – (15A NCAC 2D.0926; 15A NCAC 2D.0927; and 15A NCAC 2D.0932) [Revised March 1998; Revised March 2003; Revised March 2008]:
 1. breakout tanks of an interstate oil pipeline facility or
 2. a gasoline storage facility which usually receives gasoline from refineries primarily by pipeline, ship, or barge; and delivers gasoline to bulk gasoline plants or to commercial or retail accounts primarily by tank truck; and has an average daily throughput of more than 20,000 gal of gasoline.
- *CARB* - the California Air Resources Board (15A NCAC 2D.0953).
- *Certified Stage II Vapor Recovery System* - any system certified by the California Air Resources Board as having a vapor recovery or removal efficiency of at least 95 percent by weight (15A NCAC 2D.0953).
- *Condensate* - hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions (15A NCAC 2D.0925).
- *Continuous Vapor Control System* - a vapor control system that treats vapors displaced from tanks during filling on a demand basis without intermediate accumulation (15A NCAC 2D.0901).
- *Crude Oil* - a naturally occurring mixture which consists of hydrocarbons and/or sulfur, nitrogen and/or oxygen derivatives of hydrocarbons and which is a liquid at standard conditions (15A NCAC 2D.0925).
- *Custody Transfer* - the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipeline or any other forms of transportation (15A NCAC 2D.0925).
- *Degassing* - the process by which a tank's interior vapor space is decreased to below the lower explosive limit for the purpose of cleaning, inspection, or repair (15A NCAC 2D.0927) [Added March 2003].
- *Delivery Vessel* - tank trucks or trailers equipped with a storage tank and used for the transport of gasoline from sources or supply to stationary storage tanks of gasoline facilities (15A NCAC 2D.0928).

- *De Minimis Concentration* - the amount of a regulated substance that does not exceed 1 percent of the capacity of the tank, excluding piping and vent lines (15A NCAC 2N.0203).
- *External Floating Roof* - a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank shell (15A NCAC 2D.0925 and .0933).
- *Gasoline* - any petroleum distillate having a Reid vapor pressure of 4 psia or greater (15A NCAC 2D.0926).
- *Gasoline Dispensing Facility* - any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage tanks (15A NCAC 2D.0928).
- *Gasoline Service Station* - any gasoline dispensing facility where gasoline is sold to the motoring public from stationary storage tanks (15A NCAC 2D.0928).
- *Incoming Vapor Balance System* - a combination of pipes or hoses that create a closed system between the vapor spaces of an unloading tank truck or trailer and a receiving stationary storage tank such that vapors displaced from the receiving stationary storage tank are transferred to the tank truck or trailer being unloaded (15A NCAC 2D.0926).
- *Internal Floating Roof* - a cover or roof in a fixed roof tank which rests upon or is floated upon the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank shell (15A NCAC 2D.0925).
- *Interstitial Space* - the opening formed between the inner and outer wall of an UST system with double-walled construction or the opening formed between the inner wall of a containment sump and the UST system component that it contains (15A NCAC 2N.0203) [Added March 2008].
- *Leak* - a crack or hole that lets petroleum product vapor or liquid escape that can be identified through the use of sight, sound, smell, an explosimeter, or the use of a meter that measures volatile organic compounds. When an explosimeter or meter is used to detect a leak, a leak is a measurement that is equal to or greater than 100 percent of the lower explosive limit, as detected by a combustible gas detector using the test procedure described in Rule .0940 of this Section.(15A NCAC 2D.0927) [Added March 2008].
- *Line* - pipe suitable for transferring fluids (15A NCAC 2D.0928).
- *Liquid Balancing* - a process used to degas floating roof gasoline storage tanks with a liquid whose vapor pressure is below 1.52 psia. This is done by removing as much gasoline as possible without landing the roof on its internal supports, pumping in the replacement fluid, allowing mixing, remove as much mixture as possible without landing the roof, and repeating these steps until the vapor pressure of the mixture is below 1.52 psia (15A NCAC 2D.0927) [Added March 2003].
- *Liquid Displacement* - a process by which gasoline vapors, remaining in an empty tank, are displaced by a liquid with a vapor pressure below 1.52 psia (15A NCAC 2D.0927) [Added March 2003].
- *Liquid-Mounted Seal* - a primary seal mounted so the bottom of the seal covers the liquid surface between the tank shell and the floating roof (15A NCAC 2D.0933).
- *Outgoing Vapor Balance System* - a combination of pipes or hoses that create a closed system between the vapor spaces of an unloading stationary storage tank and a receiving tank truck or trailer such that vapors displaced from the receiving tank truck or trailer are transferred to the stationary storage tank being unloaded (15A NCAC 2D.0925).
- *Petroleum Liquids* - crude oil, condensate, and any finished or intermediate products manufactured or extracted in a petroleum refinery (15A NCAC 2D.0925 and .0933).

- *Petroleum Refinery* - any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of crude oils, or through redistillation, cracking, extraction, or reforming of unfinished petroleum derivatives (15A NCAC 2D.0925).
- *Poppeted Vapor Recovery Adaptor* - a vapor recovery adaptor that automatically and immediately closes itself when the vapor return line is disconnected and maintains a tight seal when the vapor return line is not connected (15A NCAC 2D.0928).
- *Previously Closed* - one of the following (15A NCAC 2N.0203):
 1. a UST system from which all regulated substances had been removed, the tank filled with a solid inert material, and tank openings were sealed or capped prior to 22 December 1988
 2. a UST system removal from the ground prior to 22 December 1988.
- *Replace* - to remove an UST system or UST system component and to install another UST system or UST system component in its place (15A NCAC 2N.0203) [Added March 2008].
- *Secondary Containment* - a method or combination of methods of release detection for UST systems that includes (15A NCAC 2N.0203) [Revised March 2008]:
 1. For tank installations or replacements completed prior to November 1, 2007, double-walled construction and external liners (including vaults)
 2. For underground piping installations or replacements completed prior to November 1, 2007, trench liners and double-walled construction
 3. For tank installations or replacements completed on or after November 1, 2007, double-walled construction and interstitial release detection monitoring which meet the requirements of Section .0900 of this Subchapter
 4. For all other UST system component installations or replacements completed on or after November 1, 2007, double-walled construction or containment within a liquid-tight sump, and interstitial release detection monitoring which meet the requirements of Section .0900 of this Subchapter. The Division shall approve other methods of secondary containment for connected piping that it determines are capable of meeting the requirements of Section .0900 of this Subchapter.
- *Splash Filling* - the filling of a tank truck or stationary storage tank through a pipe or hose whose discharge opening is above the surface level of the liquid in the tank being filled (15A NCAC 2D.0926) [Citation Revised March 2007; Citation Revised March 2008].
- *Stage II Vapor Recovery* - the control of gasoline vapor at the vehicle fill-pipe, where the vapors are captured and returned to a vapor-tight underground storage tank or are captured and destroyed (15A NCAC 2D.0953).
- *Stationary Storage Tank* - a gasoline storage container that is a permanent fixture (15A NCAC 2D.0928).
- *Submerged Fill Pipe* - any fill pipe with a discharge opening that is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid, or that is entirely submerged when the level of the liquid is either:
 1. 6 in. above the bottom of the tank if the tank does not have a vapor recovery adaptor
 2. 12 in. above the bottom of the tank if the tank has a vapor recovery adaptor.
 If the opening of the submerged fill pipe is cut at a slant, the distance is measured from the top of the slanted cut to the bottom of the tank (15A NCAC 2D.0928).
- *Submerged Filling* - the filling of a tank truck or stationary tank through a pipe or hose whose discharge opening is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid, or whose discharge opening is entirely submerged when the liquid level is 6 in. above the bottom of the tank (15A NCAC 2D.0926).

- *Throughput* - the amount of gasoline dispensed at a facility during any calendar month after 15 November 1990 (15A NCAC 2D.0928) and (15A NCAC 2D.0953).
- *Truck Tank* - the storage vessels of trucks or trailers used to transport gasoline from sources of supply to stationary storage tanks of bulk gasoline terminals, bulk gasoline plants, gasoline dispensing facilities and gasoline service stations (15A NCAC 2D.0932).
- *Truck Tank Vapor Collection Equipment* - any piping, hoses, and devices on the truck tank used to collect and route gasoline vapors in the tank to or from the bulk gasoline terminal, bulk gasoline plant, gasoline dispensing facility or gasoline service station vapor control system or vapor balance system (15A NCAC 2D.0932).
- *True Vapor Pressure* - the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute (API) Bulletin 2517, "Evaporation Loss from Floating Roof Tanks," 1962 (15A NCAC 2D.0901).
- *Vapor Balance System* - a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading tank and a receiving tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded (15A NCAC 2D.0932).
- *Vapor Collection System* - a vapor transport system that uses direct displacement by the liquid loaded to force vapors from the tank into a vapor control system (15A NCAC 2D.0901).
- *Vapor Control System* - a system that prevents release to the atmosphere of at least 90 percent by weight of organic compounds in the vapors displaced from a tank during the transfer of gasoline (15A NCAC 2D.0901).
- *Vapor Recovery Dispenser Riser* - piping rising from the vapor recovery piping to the dispenser (15A NCAC 2D.0953).
- *Vapor Recovery Piping* - vapor return piping connecting the storage tank(s) with the vapor recovery riser(s) (15A NCAC 2D.0953).
- *Vapor-Mounted Seal* - a primary seal mounted so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank shell, the liquid surface, and the floating roof (15A NCAC 2D.0933).

**STORAGE TANK MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	ST.2.1.NC.
Emissions/Discharges From Bulk Gasoline Terminals	ST.10.1.NC. through ST.10.18.NC.
Emissions/Discharges From POL Storage Vessels	ST.15.1.NC. through ST.15.13.NC.
Emissions/Discharges From VOL Storage Vessels	ST.20.1.NC. through ST.20.6.NC.
UST State-Specific	ST.30.1.NC
(NOTE: For portions of Title 40, Code of Federal Regulations (40 CFR), regarding underground storage tanks (USTs) adopted by reference in accordance with General Statutes (GS) 150B-14(c), please see Appendix 10-1.)	
New or Upgraded USTs	ST.35.1.NC. through ST.35.11.NC.
Release Detection for USTs	ST.60.1.NC
UST Releases	ST.80.1.NC. through ST.80.9.NC.
UST Documentation	ST.90.1.NC
Changes in Service or Closure of USTs	ST.95.1.NC
Hazardous Waste Storage Tanks	
(NOTE: 40 CFR 264.190 through 264.200 and 40 CFR 265.190 through 265.202 "Tank Systems" are incorporated by reference including subsequent amendments and editions (15A NCAC 13A.0109 (k) and 13A.0110 (j)) [Added March 1998].)	
Used Oil Storage Tanks	[Deleted]
(NOTE: 40 CFR 279, Subpart A through Subpart I has been incorporated by reference including subsequent amendments and editions. With the exception of the definitions for "Used Oil" and 40 CFR 279.82, which addresses used oil as a dust suppressant and is specifically not incorporated by reference (15A NCAC 13A.0118) [Added March 1998].)	

GUIDANCE FOR APPENDIX USERS

REFER TO APPENDIX NUMBERS:

REFER TO APPENDIX TITLES:

10-1	Federal Regulations Adopted by Reference
10-2	Compliance Schedule for Stage II Vapor Recovery Systems
10-3	Risk Classification of UST Releases to the Groundwater of the State

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>ST.2.</p> <p>MISSING CHECKLIST ITEMS</p> <p>ST.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: STORAGE TANK MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
ST.10. EMISSIONS/ DISCHARGES FROM BULK GASOLINE TERMINALS ST.10.1.NC. Bulk gasoline plants must meet equipment requirements for product transfers (15A NCAC 2D.0926(b) and (c)) [Revised March 1998]. ST.10.2.NC. Bulk gasoline plants with an average daily gasoline throughput of 4000 gal or more must meet equipment requirements (15A NCAC 2D.0926(b) and (d) and (g)) [Revised March 1998]. ST.10.3.NC. Bulk gasoline plants with an average daily	<p>Verify that gasoline is not transferred to any stationary storage tanks at the bulk plant, unless:</p> <ul style="list-style-type: none"> - the unloading tank truck or trailer and the receiving stationary storage tank are equipped with an incoming vapor balance system - the fill line discharge opening is flush with the bottom of the tank. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p> <p>Verify that a bulk gasoline plant with an average daily gasoline throughput of 4000 gal or more does not load tank trucks or trailers unless:</p> <ul style="list-style-type: none"> - the unloading stationary storage tank and the receiving tank truck or trailer are equipped with an outgoing vapor balance system - the receiving tank truck or trailer is equipped for bottom filling. <p>Verify that, once a gasoline bulk plant located in a nonattainment area for ozone reaches or exceeds the average daily throughputs of 4000 gal, the plant continues to comply with the outgoing vapor balance system requirements, even if the throughput later falls below that threshold.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p> <p>Verify that a bulk gasoline plant with an average daily throughput of more than 2500 gal but less than 4000 gal does not load any tank truck or trailer, if it is</p>

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<p>throughput of more than 2500 gal but less than 4000 gal must meet equipment requirements (15A NCAC 2D.0926(b) and (e)) [Revised March 1998].</p>	<p>located in an area with housing density exceeding specified limits, unless the loading stationary storage tank and receiving tank truck or trailer are equipped with an outgoing vapor balance system.</p> <p>(NOTE: In the counties of Alamance, Buncombe, Cabarrus, Catawba, Cumberland, Davidson, Durham, Forsyth, Gaston, Guilford, Mecklenburg, New Hanover, Orange, Rowan, and Wake, the limit on housing density is 50 residences within 1 mi² with the square centered on the loading rack at the bulk gasoline plant and with one side oriented in a true north-south direction. In all other counties, the specified limit on housing density is 100 residences/mi².)</p> <p>(NOTE: Housing density is determined by counting the number of residences using aerial photographs or other suitable methods acceptable to the Director.))</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p>
<p>ST.10.4.NC. Bulk gasoline plants that are not subject to the requirement to have an outgoing vapor balance system must meet gasoline-loading requirements (15A NCAC 2D.0926(b) and (f)) [Revised March 1998].</p>	<p>Verify that a bulk gasoline plant which is not subject to the requirement to have an outgoing vapor balance system meets the following requirements:</p> <ul style="list-style-type: none"> - equipment is available to provide for submerged filling of each tank truck or trailer - each receiving tank truck or trailer is equipped for bottom filling. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p>
<p>ST.10.5.NC. Bulk gasoline plants, tank trucks, or trailers required to be equipped with a vapor balance system must meet gasoline transfer requirements (15A NCAC 2D.0926(b) and (h)) [Revised March 1998].</p>	<p>Verify that a bulk gasoline plant, tank truck, or trailer required to be equipped with a vapor balance system does not transfer gasoline between tank truck or trailer and stationary storage tank unless all of the following requirements are met:</p> <ul style="list-style-type: none"> - the vapor balance system is in good working order and is connected and operating - tank truck or trailer hatches are closed at all times during loading and unloading operations - the tank truck's or trailer's pressure/vacuum relief valves and hatch covers

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	<p>and the truck or storage tanks or associated vapor and liquid lines are vapor tight during loading or unloading.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p>
<p>ST.10.6.NC. Vapor balance systems at bulk gasoline plants must meet connection requirements (15A NCAC 2D.0926 (b) and (i)) [Revised March 1998; Revised March 2006].</p>	<p>Verify that vapor balance systems consist of all of the following major components:</p> <ul style="list-style-type: none"> - a vapor space connection on the stationary storage tank that will be automatically and immediately closed upon disconnection to prevent the release of organic material - a connecting pipe or hose equipped with fittings which are vapor tight and will be automatically and immediately closed upon disconnection to prevent the release of organic material - a vapor space connection on the tank truck or trailer equipped with fittings that are vapor tight and will be automatically and immediately closed upon disconnection to prevent the release of organic material. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p>
<p>ST.10.7.NC. Tanks used for gasoline storage at bulk gasoline plants must meet painting requirements (15A NCAC 2D.0926(b) and (j)).</p>	<p>Verify that all tanks used for gasoline storage are painted white or silver at the next scheduled painting, or before 1 November 2002, whichever is sooner.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p>
<p>ST.10.8.NC. Pressure relief valves at bulk gasoline plants</p>	<p>Verify that pressure relief valves on tank trucks or trailers loading or unloading at bulk gasoline plants are set to release at the highest possible pressure (in</p>

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<p>must meet specific requirements (15A NCAC 2D.0926(b) and (k)).</p> <p>ST.10.9.NC. Bulk gasoline plants must meet operational requirements (15A NCAC 2D.0926(b) and (l) through (n)).</p> <p>ST.10.10.NC. During loading operations into tank trucks or trailers, bulk gasoline terminals must meet specific equipment requirements (15A NCAC</p>	<p>accordance with state or local fire codes or the National Fire Prevention Association guidelines).</p> <p>Verify that pressure relief valves on stationary storage tanks are set at 0.5 psi for storage tanks placed in service on or after 1 November 1992, and 0.25 psi for storage tanks existing before 1 November 1992.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p> <p>Verify that gasoline is not spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.</p> <p>Verify that gasoline loading and unloading operations are observed and discontinued if either of the following occur:</p> <ul style="list-style-type: none"> - any liquid leaks are observed - any vapor leaks are observed where a vapor balance system is required. <p>Verify that, when the bulk gasoline plant is required to use an outgoing vapor balance system, gasoline is not loaded into any tank truck or trailer unless the tank truck or trailer has been certified as being leak-tight within the last 12 mo.</p> <p>Verify that pressure relief valves on stationary storage tanks are set at 0.5 psi for storage tanks placed in service on or after 1 November 1992, and 0.25 psi for storage tanks existing before 1 November 1992.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to the unloading, loading, and storage facilities of all bulk gasoline plants and of all tank trucks or trailers delivering or receiving gasoline at bulk gasoline plants except stationary storage tanks with capacities less than 528 gal.)</p> <p>Verify that gasoline is not loaded into any tank trucks or trailers from any bulk gasoline terminal unless all of the following conditions are met:</p> <ul style="list-style-type: none"> - the terminal is equipped with a vapor control system that prevents emissions of VOCs from exceeding 35 mg/L - displaced vapors and gases are vented only to the vapor control system or to

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<p>2D.0927(b) and (c) [Revised March 1998].</p>	<p>a flare</p> <ul style="list-style-type: none"> - a means is provided to prevent liquid drainage from the loading device when not in use or to accomplish complete drainage before disconnection - all loading and vapor lines are equipped with fittings that make vapor-tight connections and are automatically and immediately closed upon disconnection. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: This rule applies to bulk gasoline terminals and the appurtenant equipment necessary to load the tank truck or trailer compartments.)</p> <p>(NOTE: A bulk gasoline terminal permitted before 1 December 1992 to emit toxic air pollutants and continuing to adhere to all terms and conditions of the permit is exempted from the following requirements (15A NCAC 2D.0927(i)):</p> <ul style="list-style-type: none"> - painting all tanks used for gasoline storage white or silver - installation of a self-supporting roof on each external floating roof tank with an inside diameter of 100 ft or less - installation of the following equipment: <ul style="list-style-type: none"> - rim-mounted secondary seals on all external and internal floating roof tanks - welded seams where possible, otherwise gaskets on roof and deck fittings - floats in the slotted guide poles with a gasket around the cover of the poles - offset of benzene emissions.) <p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p> <p>Verify that neither of the following occurs:</p> <ul style="list-style-type: none"> - gasoline discarded in sewers, stored in open containers, or handled in any manner that would result in evaporation - pressure in the vapor collection system exceeds tank truck or trailer pressure relief settings. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>
<p>ST.10.11.NC. Bulk gasoline terminals must meet operating requirements (15A NCAC 2D.0927(d)).</p>	<p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p> <p>Verify that all tanks used for gasoline storage are painted white or silver at the next scheduled painting, or by 1 December 2002, whichever occurs first.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p>
<p>ST.10.12.NC. Tanks used for gasoline storage at bulk terminals must meet painting requirements (15A NCAC 2D.0927(e)).</p>	<p>Verify that all tanks used for gasoline storage are painted white or silver at the next scheduled painting, or by 1 December 2002, whichever occurs first.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p>

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<p>ST.10.13.NC. External floating roof tanks at bulk terminals with an inside diameter of 100 ft or less must meet equipment requirements (15A NCAC 2D.0927 (f)) [Revised March 2006].</p>	<p>Verify that a self-supporting roof, such as a geodesic dome, is installed on each external floating roof tank with an inside diameter of 100 ft or less used to store gasoline at the next time the tank is taken out of service, or by 1 December 2002, whichever occurs first.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p>
<p>ST.10.14.NC. Tanks at bulk gasoline terminals must meet equipment requirements (15A NCAC 2D.0927(g)).</p>	<p>Verify that all tanks storing gasoline at the terminal have all of the following equipment:</p> <ul style="list-style-type: none"> - rim-mounted secondary seals on all external and internal floating roof tanks - welded seams, where possible, otherwise gaskets on roof and deck fittings - floats in the slotted guide poles with a gasket around the cover of the poles. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p>
<p>ST.10.15.NC. If facility or operational modifications of a bulk gasoline terminal in existence before 1 December 1992 result in increased benzene emissions, those benzene emissions must be reduced (15A NCAC 2D.0927(h)).</p>	<p>(NOTE: This checklist item applies to bulk gasoline terminals in existence before 1 December 1992 that have undergone facility or operational modification which has caused an increase in benzene emissions, which, in turn, has caused both of the following to occur:</p> <ul style="list-style-type: none"> - emissions of VOC increase by more than 25 tons cumulative at any time during the 5 yr following modifications - annual emissions of benzene from the cluster (including pipeline and marketing terminals served by the pipeline) exceed benzene emissions from that cluster based on calendar year 1991 gasoline throughput and application of the requirements in this section.) <p>Verify that the annual increase in emissions due to an operational or facility modification is offset within the cluster by reduction in benzene emissions beyond that otherwise achieved as a result of compliance with state VOC limitations, in the ratio of at least 1.3 to 1.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p>

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<p>ST.10.16.NC. Tank trucks and trailers must not be loaded at bulk gasoline terminals unless they have been certified as leak-tight (15A NCAC 2D.0927 (k) and (l)) [Revised March 2003; Revised March 2004; Citation Revised March 2007].</p>	<p>Verify that tank trucks and trailers loaded at bulk gasoline terminals are certified as leak-tight within the last 12 months.</p> <p>Verify that the owner or operator of a bulk gasoline terminal has on file at the terminal a copy of the certification test conducted for each gasoline tank truck loaded at the terminal.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p>
<p>ST.10.17.NC. External or internal floating roof tanks at bulk gasoline terminals must meet degassing requirements (15A NCAC 2D.0927 (m)) [Added March 2003; Citation Revised March 2007].</p>	<p>Verify that emissions of gasoline from degassing of external or internal floating roof tanks at a bulk gasoline terminal are collected and controlled by at least 90 percent by weight.</p> <p>(NOTE: Liquid balancing cannot be used to degas gasoline storage tanks at bulk gasoline terminals.)</p> <p>(NOTE: Bulk gasoline storage tanks containing not more than 138 gallons of liquid gasoline or the equivalent of gasoline vapor and gasoline liquid are exempted from the degassing requirements if gasoline vapors are vented for at least 24-hours.)</p> <p>Verify that gasoline vapors are vented for 24 hr from bulk gasoline storage tanks containing not more than 138 gallons of liquid gasoline or the equivalent of gasoline vapor and gasoline liquid.</p> <p>Verify that degassing external or internal floating roof tanks is documented.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: See AT.10.10.NC. for applicability and exceptions.)</p>
<p>ST.10.18.NC. Owners and operators of bulk gasoline terminals must inspect for leaks (15A NCAC 2D.0927(n) through (r)) [Added March 2008].</p>	<p>Verify that the owner or operator of a bulk gasoline terminal visually inspects the following for leaks each day that the terminal is both manned and open for business:</p> <ul style="list-style-type: none"> - the vapor collection system - the vapor control system - each lane of the loading rack while a gasoline tank truck or trailer is being loaded. <p>Verify that, if no leaks are found, the owner or operator records that no leaks were found and, if a leak is found, the owner or operator records the information and</p>

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	<p>repairs.</p> <p>Verify that the owner or operator of a bulk gasoline terminal inspects weekly for leaks:</p> <ul style="list-style-type: none"> - the vapor collection system - the vapor control system - each lane of the loading rack while a gasoline tank truck or trailer is being loaded. <p>Verify that an inspection using either a meter used to measure volatile organic compounds or an explosimeter is conducted every month.</p> <p>Verify that, for each leak found, the owner or operator of a bulk gasoline terminal records:</p> <ul style="list-style-type: none"> - the date of the inspection - the findings (location, nature and severity of each leak) - the corrective action taken - the date when corrective action was completed - any other information that the terminal deems necessary to demonstrate compliance. <p>Verify that the owner or operator of a bulk gasoline terminal repairs all leaks as follows:</p> <ul style="list-style-type: none"> - the vapor collection hose that connects to the tank truck or trailer is repaired or replaced before another tank truck or trailer is loaded at that rack after a leak has been detected originating with the terminal's equipment rather than from the gasoline tank truck or trailer - all other leaks are repaired as expeditiously as possible but no later than 15 days from their detection <ul style="list-style-type: none"> - if more than 15 days are required to make the repair, the reasons that the repair cannot be made are documented, and the leaking equipment is not used after the fifteenth day from when the leak detection was found until the repair is made.

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DISCHARGES FROM POL STORAGE VESSELS ST.15.1.NC. Facilities operating any VOC emission source or control equipment must not conceal emissions (15A NCAC 2D.0906). ST.15.2.NC. Fixed roof storage vessels with capacities greater than 39,000 gal containing volatile petroleum liquids with a true vapor pressure greater than 1.52 psia must meet equipment requirements (15A NCAC 2D.0925(b) through 2D.0925(d)).	<p>Verify that the facility does not build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission that would otherwise constitute a violation.</p> <p>(NOTE: This exclusion includes, but is not limited to, the use of gaseous diluents to achieve compliance and piecemeal carrying out of an operation to avoid coverage by a regulation that applies only to operations larger than a specified size.)</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: Volatile petroleum liquid storage vessels meeting one of the following criteria are not subject to the requirements of this checklist item:</p> <ul style="list-style-type: none"> - equipped with external floating roofs - with capacities less than 416,000 gal used to store produced crude oil and condensate prior to lease custody transfer.) <p>Verify that the storage vessel has been retrofitted with an internal floating roof equipped with a closure seal, or seals, to close the space between the roof edge and tank wall.</p> <p>Verify that the storage vessel is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.</p> <p>Verify that all openings, except stub drains, are equipped with covers, lids, or seals such that:</p> <ul style="list-style-type: none"> - the cover, lid, or seal is closed at all times except when in actual use - automatic bleeder vents are closed at all times except when the roof is floated off or landed on roof leg supports - rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. <p>Verify that routine visual inspections are conducted through roof hatches once a month.</p> <p>Verify that a complete inspection of cover and seals is conducted whenever the tank is emptied for maintenance, shell inspection, cleaning, or for other nonoperational reasons, or whenever excessive vapor leakage is observed.</p> <p>Verify that the following records are maintained:</p>

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ST.15.3.NC. Gasoline dispensing facilities, gasoline service stations, and delivery vessels delivering gasoline to a gasoline dispensing facility or gasoline service station must meet operating requirements to control emissions (15A NCAC 2D.0928(c) through (j)).	<ul style="list-style-type: none"> - reports of inspection results - a record of the average monthly storage temperature and true vapor pressures of petroleum liquids stored - records of throughput quantities and types of petroleum liquids for each storage vessel. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p> <p>(NOTE: The requirements of this checklist item do not apply to the following:</p> <ul style="list-style-type: none"> - transfers made to storage tanks of gasoline dispensing facilities or gasoline service stations equipped with floating roofs or their equivalent - stationary tanks which meet any of the following criteria: <ul style="list-style-type: none"> - have a capacity of not more than 2000 gal and are in place before 1 July 1979, if equipped with a submerged fill pipe - have a capacity of not more than 550 gal and are installed after 30 June 1979, if equipped with a (portable) submerged fill pipe - have a capacity of not more than 2000 gal and are located on a farm or a residence and used to store gasoline for farm equipment or residential use if gasoline is delivered to the tank through a (portable) submerged fill pipe, except in ozone nonattainment areas - located at a gasoline dispensing facility or gasoline service station where the combined annual throughput of gasoline does not exceed 50,000 gal, if the tanks are permanently equipped with submerged fill pipes - any tanks used exclusively to test fuel dispensing meters.) <p>Verify that gasoline is not transferred from any delivery vessel into any stationary storage tank unless all of the following conditions are met:</p> <ul style="list-style-type: none"> - the tank is equipped with a submerged fill pipe, and vapors displaced from the storage tank during filling are controlled by a vapor control system - the vapor control system is in good working order and is connected and operating with a vapor tight connection - the vapor control system is properly maintained and all damaged or malfunctioning components or elements of design are repaired, replaced, or modified - gauges, meters, or other specified testing devices are maintained in proper working order - the delivery vessel and vapor collection system meet all applicable requirements. <p>Verify that minimally the following records are kept for at least 2 yr after the date on which the record was made or the report submitted:</p> <ul style="list-style-type: none"> - scheduled date for maintenance or the date a malfunction was detected - the date maintenance was performed or the malfunction corrected - component or element of design of the control system repaired, replaced, or modified.

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	<p>Verify that copies of all required records and reports are made available within a reasonable time to the Director upon written request.</p> <p>Verify that vapor control systems include one or more of the following:</p> <ul style="list-style-type: none"> - a vapor-tight line from the storage tank to the delivery vessel and: <ul style="list-style-type: none"> - for a coaxial vapor recovery system, either a poppeted or unpoppeted vapor recovery adaptor - for a dual point vapor recovery system, poppeted vapor recovery adaptor - a refrigeration-condensation system or equivalent designed to recover at least 90 percent by weight of the organic compounds in the displaced vapor. <p>Verify that, if an unpoppeted vapor recovery adaptor is used, both of the following requirements are met:</p> <ul style="list-style-type: none"> - the tank liquid fill connection remains covered either with a vapor-tight cap or a vapor return line, except when the vapor return line is being connected or disconnected - the unpoppeted vapor recovery adaptor is replaced with a poppeted vapor recovery adaptor when the tank is replaced or removed and upgraded. <p>Verify that, where vapor lines from storage tanks are manifolded, poppeted vapor recovery adapters are used.</p> <p>Verify that no more than one tank is loaded at a time if the manifold vapor lines are 2 in. and smaller.</p> <p>(NOTE: If the manifold vapor lines are 3 in. and larger, 2 tanks at a time may be loaded.)</p> <p>Verify that vent lines on tanks with Stage I controls have pressure release valves or restrictors.</p> <p>Verify that the vapor-laden delivery vessel meets both of the following conditions:</p> <ul style="list-style-type: none"> - is designed and maintained to be vapor-tight during loading and unloading operations and during transport, with the exception of normal pressure/vacuum venting as required by regulations of the Department of Transportation - if it is refilled in North Carolina, it is refilled only at either: <ul style="list-style-type: none"> - bulk gasoline plants complying with applicable state requirements - bulk gasoline terminals complying with applicable state requirements. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>
ST.15.4.NC. Gasoline tank	Verify that gasoline truck tanks and their vapor collection systems are tested

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<p>trucks equipped for vapor collection must meet operating requirements to control emissions (15A NCAC 2D.0932(c)) [Revised March 2004; Revised March 2008; Revised March 2009].</p>	<p>annually by a certified facility.</p> <p>Verify that a gasoline truck tank is not used if it sustains a pressure change greater than 1.0 in. of water in 5 min when pressurized to a gauge pressure of 18 in. of water or when evacuated to a gauge pressure of 6.0 in. of water.</p> <p>Verify that each gasoline truck tank certified leak-tight displays a sticker near the Department of Transportation certification plate required by 49 CFR 178.340-10b.</p> <p>Verify that there are no liquid leaks from any gasoline truck tank.</p> <p>Verify that any truck tank with a leak equal to or greater than 100 percent of the lower explosive limit (LEL), as detected by a combustible gas detector, is not used beyond 15 days after the leak is discovered, unless the leak is repaired and the tank certified to be leak tight.</p> <p>Verify that records of all certification testing and repairs are maintained.</p> <p>Verify that the records identify the gasoline truck tank, the date of the test or repair; and, if applicable, the type of repair and the date of retest.</p> <p>Verify that the records of certification tests include the following:</p> <ul style="list-style-type: none"> - the gasoline truck tank identification number - the initial test pressure and the time of the reading - the final test pressure and the time of the reading - the initial test vacuum and the time of reading - the final test vacuum and the time of the reading - the date and location of the tests - the NC sticker number issued - the final change in pressure of the internal vapor value test. <p>Verify that a copy of the most recent certification report is kept with the truck tank.</p> <p>Verify that the owner or operator of the truck tank also files a copy of the most recent certification test with each bulk gasoline terminal that loads the truck tank.</p> <p>Verify that records are maintained for at least two years after the date of the testing or repair, and copies of such records are made available within a reasonable time to the Director upon written request.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>
<p>ST.15.5.NC. Vapor control systems at bulk gasoline terminals, bulk gasoline</p>	<p>Verify that the vapor collection system and vapor control system are designed and operated to prevent gauge pressure in the truck tank from exceeding 18 in. of</p>

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<p>plants, gasoline dispensing facilities, and gasoline service stations equipped with vapor balance or vapor control systems must meet operating requirements to control emissions (15A NCAC 2D.0932(d)) [Revised March 2003; Revised March 2004; Revised March 2009].</p>	<p>water and to prevent a greater than 6 in. of water.</p> <p>Verify that, during loading and unloading operations, there is neither:</p> <ul style="list-style-type: none"> - vapor leakage from the vapor collection system such that a reading equal to or greater than 100 percent of the LEL at 1 in. around the perimeter of each potential leak source - a liquid leak. <p>Verify that, if a leak is discovered exceeding a reading equal to or greater than 100 percent of the LEL at 1 in., the vapor collection or vapor control system (and therefore the source) is not used beyond 15 days after the leak is discovered, unless the leak is repaired and the system is retested and found to comply with this requirement.</p> <p>Verify that a vapor collection system located at a bulk gasoline plant or a bulk gasoline terminal is tested at least once a year.</p> <p>(NOTE: If after 2 complete annual checks no more than 10 leaks are found, the Director may allow less frequent monitoring. If more than 20 leaks are found, the Director may require that the frequency of monitoring be increased.)</p> <p>Verify that vapor control systems at bulk gasoline terminals, bulk gasoline plants, gasoline dispensing facilities, and gasoline service stations equipped with vapor balance or vapor control systems maintain records of all certification testing and repairs.</p> <p>Verify that the records identify the gasoline truck tank, vapor collection system, or vapor control system; the date of the test or repair; and, if applicable, the type of repair and the date of retest.</p> <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>
<p>ST.15.6.NC. [Deleted March 2009].</p>	<p>(NOTE: 15A NCAC 2D.0932 revised. See ST.15.4.NC.)</p>
<p>ST.15.7.NC. Storage vessels with external floating roofs and capacities greater than 950 barrels containing petroleum liquids with a true vapor pressure exceeding 1.52 psia must meet design requirements (15A NCAC 2D.0933(c), (d)(1) through</p>	<p>(NOTE: These requirements do not apply to petroleum liquid storage vessels that meet one of the following criteria:</p> <ul style="list-style-type: none"> - have external floating roofs and capacities less than 10,000 barrels and are used to store produced crude oil and condensate prior to custody transfer - have external floating roofs and store waxy, heavy pour crudes - have external floating roofs, contain a petroleum liquid with a true vapor pressure less than 4.0 psia, and meet both of the following criteria: <ul style="list-style-type: none"> - tanks are of welded construction - the primary seal is a metallic-type shoe seal, a liquid-mounted foam

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<p>psia must meet visual inspection and record keeping requirements (15A NCAC 2D.0933(c), (d)(7) through (9), and (f)) [Revised March 2005].</p>	<p>include the following information:</p> <ul style="list-style-type: none"> - reports of results of inspections - a record of the average monthly storage temperature and the true vapor pressures or Reid vapor pressures of the petroleum liquids stored - records of throughput quantities and types of volatile petroleum liquids for each storage vessel. <p>Verify that records of the following are maintained for storage vessels with an external floating roof without a secondary seal or approved alternative and containing a petroleum liquid with a true vapor pressure greater than 1.0 psi:</p> <ul style="list-style-type: none"> - the average monthly storage temperature - type of liquid - throughput quantities - maximum true vapor pressure for all petroleum liquids with a true vapor pressure greater than 1.0 psi. <p>(NOTE: See AE.125.2.NC. and AE.125.3.NC. for general operational requirements.)</p>
<p>ST.15.9.NC. [Deleted March 2009].</p>	<p>(NOTE: 15A NCAC 2D.0953 repealed.)</p>
<p>ST.15.10.NC. [Deleted March 2009].</p>	<p>(NOTE: 15A NCAC 2D.0953 repealed.)</p>
<p>ST.15.11.NC. [Deleted March 2009].</p>	<p>(NOTE: 15A NCAC 2D.0954 repealed.)</p>
<p>ST.15.12.NC. [Deleted March 2009].</p>	<p>(NOTE: 15A NCAC 2D.0954 repealed.)</p>
<p>ST.15.13.NC. [Deleted March 2009].</p>	<p>(NOTE: 15A NCAC 2D.0954 repealed.)</p>

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<p>ST.20.</p> <p>EMISSIONS/ DISCHARGES FROM VOL STORAGE VESSELS</p> <p>ST.20.1.NC. Facilities operating any VOC emission source, including VOL storage vessels, must meet recordkeeping requirements (15A NCAC 2D.0902, 2D.0903 and 2D.0905) [Citation Revised March 2004; Revised March 2005].</p>	<p>Verify that a facility operating any VOC emission source maintains the following records:</p> <ul style="list-style-type: none"> - records detailing all activities relating to any compliance schedule - records detailing all malfunctions - records of all testing conducted - records of all monitoring conducted - records necessary to determine compliance. <p>Verify that the owner or operator of any VOC emission source or control equipment takes the following steps:</p> <ul style="list-style-type: none"> - installs, operates, and maintains process and control equipment monitoring instruments or procedures as necessary - maintains, in writing, data and reports relating to monitoring instruments or procedures which will, upon review, document the compliance status of the VOC emission source or control equipment to the satisfaction of the Director; such data and reports are, at a minimum, maintained daily. <p>Verify that copies of all required records and reports are retained for a minimum of 2 yr after the date on which the record was made or the report submitted.</p> <p>Verify that copies of all required records and reports are made available within a reasonable time to the Director upon written request.</p> <p>(NOTE: The following facilities or operations are exempt or excluded from these requirements:</p> <ul style="list-style-type: none"> - sources whose VOC emissions are no more than 15 lb/day - gasoline service stations or gasoline dispensing facilities regardless of VOC emission levels - sources whose emissions do not exceed 800 pounds of volatile organic compounds per calendar month and that are: <ul style="list-style-type: none"> - bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments - bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratory - bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness - research and development laboratory activities provided the activity

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<p>ST.20.2.NC. Facilities operating any VOC emission source or control equipment must not conceal emissions (15A NCAC 2D.0906).</p>	<p>produces no commercial product or feedstock material</p> <ul style="list-style-type: none"> - emissions of volatile organic compounds during startup or shutdown operations from sources which use incineration or other types of combustion to control emissions of volatile organic compounds whenever the off-gas contains an explosive mixture during the startup or shutdown operation if the exemption is approved by the Director.) <p>(NOTE: See ST.20.1.NC. for exemptions.)</p> <p>Verify that a facility operating any VOC emission source does not build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission that would otherwise constitute a violation.</p> <p>(NOTE: This exclusion includes, but is not limited to, the use of gaseous diluents to achieve compliance and piecemeal carrying out of an operation to avoid coverage by a regulation that applies only to operations larger than a specified size.)</p>
<p>ST.20.3.NC. [Deleted March 2005].</p>	<p>(NOTE: 15A NCAC 2D.0518 was repealed.)</p>
<p>ST.20.4.NC. [Deleted March 2005].</p>	<p>(NOTE: 15A NCAC 2D.0518 was repealed.)</p>
<p>ST.20.5.NC. VOC transfer from a storage tank to tank trucks, trailers, or railroad tank cars must meet operating requirements (15A NCAC 2D.0948) [Revised March 2005].</p>	<p>(NOTE: See ST.20.1.NC. for exemptions.)</p> <p>(NOTE: This requirement applies to VOC transfer operations not covered by other requirements addressing the transfer of petroleum products.)</p> <p>Verify that not more than 20,000 gal of any VOC with a vapor pressure of 1.5 psi or greater under actual conditions is loaded in one day into any tank-truck, trailer, or railroad tank car from any loading facility, unless submerged loading through boom loaders extending into the compartment being loaded are used, or other methods demonstrated to the Director to be at least as efficient.</p>
<p>ST.20.6.NC. Stationary tanks, reservoirs, or other containers, with a capacity greater than 50,000 gal, storing any liquid VOC with a vapor pressure of 1.5 psia or</p>	<p>(NOTE: See ST.20.1.NC. for exemptions.)</p> <p>Verify that these tanks, reservoirs, or other containers meet one of the following criteria:</p> <ul style="list-style-type: none"> - is a pressure tank capable of maintaining working pressures sufficient at all

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<p>greater under actual storage conditions must meet vapor control requirements (15A NCAC 2D.0902(h) and 2D.0949) [Revised March 2004; Revised March 2005].</p>	<p>times to prevent vapor gas loss into the atmosphere</p> <ul style="list-style-type: none"> - is designed and equipped with one of the following vapor loss control devices: <ul style="list-style-type: none"> - a floating pontoon, double-deck type floating roof, or internal pan type floating roof equipped with closure seals to enclose any space between the cover's edge and compartment wall - a vapor recovery system or other equipment or means of air pollution control, as approved by the Director, which reduces the emission of organic materials into the atmosphere by at least 90 percent by weight. <p>(NOTE: A floating pontoon, double-deck type floating roof, or internal pan type floating roof equipped with closure seals is not permitted for VOCs with a vapor pressure of 11.0 psia or greater under actual storage conditions.)</p> <p>Verify that all tank gauging or sampling devices are gas-tight, except when tank gauging or sampling is taking place.</p>

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ST.30. UST STATE-SPECIFIC ST.30.1.NC. A diagram must be maintained onsite, of all underground storage tanks (UST) (15A NCAC 2N.0104).	<p>Verify that each facility maintains a current diagram clearly indicating for each UST the following information:</p> <ul style="list-style-type: none"> - location with respect to property boundaries and any permanent onsite structures - total storage capacity, in gallons - exact type of petroleum product (such as unleaded gasoline, No. 2 fuel oil, diesel) or hazardous substance stored - the year the tank was installed. <p>Verify that the diagram is made available for inspection, during normal operating hours, to authorized representatives of the Department.</p>

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<p>ST.35.</p> <p>NEW OR UPGRADED USTS</p> <p>ST.35.1.NC. USTs installed or replaced after December 22, 1998 and before November 1, 2007 must meet performance requirements (15A NCAC 2N.0301(b) and (c)) [Revised March 2008].</p> <p>ST.35.2.NC. USTs installed or replaced after December 22, 1998 and before November 1, 2007 and located in specific areas must meet implementation schedule and performance standards (15A NCAC 2N.0301(d) and 0304(a)) [Added March 2001; Revised March 2008].</p>	<p>Verify that a UST system is not installed within 100 ft of a well serving a public water system or within 50 ft of any other well supplying water for human consumption.</p> <p>Verify that, if a new UST system replaces a UST system which existed on 1 January 1991 and which is located within 100 ft of a well serving a public water system or 50 ft of any other well supplying water for human consumption, the new UST system meets the following requirements:</p> <ul style="list-style-type: none"> - meets the performance standards of 40 CFR 280.20 - meets the secondary containment provisions of 40 CFR 280.42(b)(1) through (b)(4) - is not located nearer to the water supply source than the UST system it replaces. <p>Verify that UST systems meet the requirements for secondary containment described at 40 CFR 280.42(b)(1) through (4) if installed in any of the following locations:</p> <ul style="list-style-type: none"> - within 500 ft of a well serving a public water supply or within 100 ft of any other well supplying water for human consumption - within 500 ft of any surface water classified as High Quality Water (HQW), Outstanding Resource Waters (ORW), WS-I, WS-II, or SA - in a location determined by the Director to be unsuitable for conventional installation based on an evaluation of the site by Division staff. <p>(NOTE: This applies to USTs installed in the following locations:</p> <ul style="list-style-type: none"> - within 500 ft of a well serving a public water supply or within 100 ft of any other well supplying water for human consumption - within 500 ft of any surface water classified as High Quality Water (HQW), Outstanding Resource Waters (ORW), WS-I, WS-II, or SA - in a location determined by the Director to be unsuitable for conventional installation based on an evaluation of the site by Division staff.) <p>Verify that all new UST systems and all replacements to a UST system were provided with secondary containment as of April 1, 2001.</p> <p>Verify that all steel or metal connected piping and ancillary equipment of a UST system regardless of date of installation, is provided with secondary containment as of January 1, 2005.</p>

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<p>ST.35.3.NC. USTs installed or replaced after December 22, 1998 and before November 1, 2007 and located in specific areas must have enhanced leak detection monitoring (15A NCAC 2N.0301(d) and 2N.0304 (b)) [Added March 200; Revised March 2008].</p>	<p>Verify that all fiberglass or non-metal connected piping and ancillary equipment of a UST system regardless of date of installation, are provided with secondary containment as of January 1, 2008.</p> <p>Verify that all UST systems installed on or before January 1, 1991 are provided with secondary containment as of January 1, 2008.</p> <p>Verify that all UST systems installed after January 1, 1991 are provided with secondary containment as of January 1, 2016.</p> <p>(NOTE: This applies to USTs installed in the following locations:</p> <ul style="list-style-type: none"> - within 500 ft of a well serving a public water supply or within 100 ft of any other well supplying water for human consumption - within 500 ft of any surface water classified as High Quality Water (HQW), Outstanding Resource Waters (ORW), WS-I, WS-II, or SA - in a location determined by the Director to be unsuitable for conventional installation based on an evaluation of the site by Division staff.) <p>Verify that all owners and operators of UST systems implemented enhanced leak detection monitoring by April 1, 2001.</p> <p>Verify that the enhanced leak detection monitoring consisted of the following:</p> <ul style="list-style-type: none"> - an automatic tank gauging system (ATG) for each UST - an electronic line leak detector (ELLD) for each pressurized piping system - at least one 0.1 gallon per h (gph) test per month or at least one 0.2 gph test conducted per week on each UST system - a line tightness test capable of detecting a leak rate of 0.1 gph is conducted at least once per year for each suction piping system. <p>(NOTE: No release detection is required for suction piping that is designed and constructed in accordance with 40 CFR 280.41(b)(2)(i) through (iv).)</p> <p>Verify that, if the UST system is located within 500 feet of a public water supply well or within 100 feet of any other well supplying water for human consumption, the supply well is sampled at least once per year and the sample is analyzed for the constituents of petroleum using the following methods:</p> <ul style="list-style-type: none"> - EPA Methods 601 and 602, including methyl tertiary butyl ether, isopropyl ether and xylenes - EPA Method 625 - if a waste oil UST system is present which does not meet the requirements for secondary containment in accordance with 40 CFR 280.42(b)(1) through (b)(4), the sample is analyzed for lead and chromium using Standard Method 3030C preparation. <p>Verify that the first sample is collected and the results received by the Division by</p>

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<p>ST.35.4.NC. Performance standards for UST system installations or replacements completed after December 22, 1988 and before November 1, 2007 must meet location and secondary containment requirements (15A NCAC 2N.0301) [Added March 2008].</p>	<p>October 1, 2000 and yearly thereafter.</p> <p>.(NOTE: The "Performance standards for new UST systems" contained in 40 CFR 280.20 (Subpart B) are hereby incorporated by reference including subsequent amendments and editions except that:</p> <ul style="list-style-type: none"> - 40 CFR 280.20(a)(4), standards for a tank constructed of metal without additional corrosion protection measures, is not incorporated by reference - 40 CFR 280.20(b)(3), standards for piping constructed of metal without additional corrosion protection measures, is not incorporated by reference - UST system or UST system component installations or replacements completed on or after November 1, 2007, must meet the requirements of Section .0900 of this Subchapter (see ST.35.5.NC through ST.35.10.NC.) <p>Verify that no UST system is installed within 100 feet of a well serving a public water system or within 50 feet of any other well supplying water for human consumption.</p> <p>(NOTE: An UST system existing on January 1, 1991 and located within the area described above, may be replaced with a new tank meeting the performance standards of 40 CFR 280.20 and the secondary containment provisions of 40 CFR 280.42(b)(1) through (4). The replacement UST system may not be located nearer to the water supply source than the UST system being replaced.)</p> <p>Verify that an UST system meets the requirements for secondary containment described at 40 CFR 280.42(b)(1) through (4) if installed:</p> <ul style="list-style-type: none"> - within 500 feet of a well serving a public water supply or within 100 feet of any other well supplying water for human consumption - within 500 feet of any surface water classified as High Quality Water (HQP), Outstanding Resource water (ORW), WS-I, WS-II or SA.
<p>ST.35.5.NC. All USTs installed or replaced after November 2007 must meet location and installation requirements (15A NCAC 2N.0901) [Added March 2008].</p>	<p>(NOTE: This checklist item applies to an UST system or UST system component installation or replacement completed on or after November 1, 2007.)</p> <p>Verify that an UST system or UST system component is not installed or replaced within 100 feet of a well serving a public water system or within 50 feet of any other well supplying water for human consumption.</p> <p>(NOTE: Gravity-fed vertical fill pipes, vapor recovery, vent lines, and containment sumps are excluded from the secondary containment requirements.)</p> <p>Verify that, if required by the equipment manufacturer, persons installing, replacing or repairing UST systems or UST system components are trained and certified by the equipment manufacturer or the equipment manufacturer's authorized representative to install, replace or repair such equipment.</p>

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<p>ST.35.6.NC. All USTs installed or replaced after November 2007 must meet secondary containment and release detection requirements (15A NCAC 2N.0901(i) through (l)) [Added March 2008].</p>	<p>Verify that UST systems or UST system components are installed, tested, operated, and maintained in accordance with the manufacturer's specifications and the codes of practice, and industry standards.</p> <p>Verify that UST systems or UST system components are not installed or replaced in areas where they will be in contact with contaminated soil or free product.</p> <p>Verify that UST systems and UST system components meet all of the installation requirements specified in 40 CFR 280.20(c), (d) and (e) (spill and overfill prevention equipment (see AT.35.1.US.), installation, and certification of installation (see ST.35.4.US.)).</p> <p>(NOTE: This checklist item applies to an UST system or UST system component installation or replacement completed on or after November 1, 2007.)</p> <p>Verify that secondary containment systems are designed, constructed, installed and maintained to:</p> <ul style="list-style-type: none"> - detect the failure of the inner wall and outer wall for UST system components with double wall construction - contain regulated substances released from an UST system until they are detected and removed - prevent a release of regulated substances to the environment outside of the containment system - direct releases to a monitoring point or points - provide a release detection monitoring device or monitoring method for the interstitial space - continuously monitor the interstitial space of double-walled tanks for releases using pressure, vacuum or hydrostatic monitoring methods - continuously monitor the interstitial space of non-tank components for releases using pressure, vacuum, or hydrostatic methods, or by using an electronic sensor placed in a containment sump and in the interstitial space of a double-walled spill bucket - provide a printed record of release detection monitoring results and an alarm history for each month. <p>Verify that new or replacement dispensers are provided with under dispenser containment sumps and meet the secondary containment requirements and performance standards.</p> <p>Verify that all release detection monitoring equipment are installed, calibrated, operated and maintained in accordance with manufacturer's instructions.</p> <p>Verify that all release detection monitoring equipment and overfill prevention equipment are checked annually for operability, proper operating condition and proper calibration in accordance with the manufacturers written guidelines.</p> <p>Verify that the results of the last annual check are recorded, maintained at the</p>

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<p>ST.35.7.NC. All USTs installed or replaced after November 2007 must meet notification requirements (15A NCAC 2N.0902) [Added March 2008].</p>	<p>UST site or the tank owner or operator's place of business, and made available for inspection.</p> <p>Verify that releases detected in an interstitial space are reported and investigated in accordance with the manufacturers written guidelines.</p> <p>Verify that any changes in the original physical characteristics or integrity of a piping system or a containment sump are also reported and investigated in accordance with the manufacturer's written guidelines.</p> <p>Verify that owners and operators provide notification of installation or replacement of an UST system, UST, or connected piping to the Division.</p> <p>Verify that the notice includes:</p> <ul style="list-style-type: none"> - an UST system design - equipment to be installed including model and manufacturer and the materials of construction - device or method to be used to allow piping to be located after it is buried underground - a site plan drawn to scale showing the proposed location of UST systems relative to buildings and other permanent structures, roadways, utilities, other UST systems, monitoring wells, and water supply wells used for human consumption within 500 feet - a schedule for UST system installation or replacement. <p>Verify that owners and operators notify the Division at least 48 hours prior to the following stages of construction so that the Division may perform an inspection of the installation:</p> <ul style="list-style-type: none"> - pre-installation tightness testing of tanks - final tightness testing of piping before it is backfilled. <p>Verify that documents showing the following information are submitted to the Division within 30 days after UST system, UST, or connected piping installation or replacement is completed and are maintained at the UST system site or the owner's or operator's place of business for the life of the UST system:</p> <ul style="list-style-type: none"> - certification from the UST system installer - manufacturer warranties - any equipment performance claims - records of all tightness testing performed. <p>(NOTE: These records must be transferred to a new tank owner at the time of a transfer of tank ownership.)</p>

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ST.35.8.NC. All UST tanks installed or replaced after November 2007 must meet specific requirements (15A NCAC 2N.0903) [Added March 2008].	<p>Verify that tanks are protected from external corrosion in accordance with 40 CFR 280.20(a)(1), (3) or (5) (see ST.35.3.US>).</p> <p>Verify that the exterior surface of a tank bears a permanent marking, code stamp or label showing the following information:</p> <ul style="list-style-type: none"> - the engineering standard used - the diameter in feet - the capacity in gallons - the materials of construction of the inner and outer walls of the tank including any external or internal coatings - serial number or other unique identification number designated by the tank manufacturer - date manufactured - identity of manufacturer. <p>Verify that, whenever an existing tank is removed prior to installation of a new tank, piping that does not meet the standards is also removed.</p> <p>Verify that tanks that will be reused are certified by the tank manufacturer prior to re-installation and proof of certification is submitted to the Division along with a notice of intent.</p> <p>Verify that tanks are tested for tightness before and after installation:</p> <p>Verify that, if a tank fails a tightness test, tank installation is suspended until the tank is replaced or repaired in accordance with the manufacturer's specifications.</p>
ST.35.9.NC. All UST piping installed or replaced after November 2007 must meet specific requirements (15A NCAC 2N.0904) [Added March 2008].	<p>Verify that piping, with the exception of flexible connectors and piping connections, is pre-fabricated with double-walled construction.</p> <p>(NOTE: Any flexible connectors or piping connections that do not have double-walled construction are installed in containment sumps that meet the requirements listed in ST.35.9.NC.)</p> <p>Verify that piping is constructed of non-corroding materials.</p> <p>Verify that piping complies with the UL 971 standard "Nonmetallic Underground Piping for Flammable Liquids;" that is in effect at the time the piping is installed.</p> <p>Verify that piping that is buried underground is constructed with a device or method that allows it to be located once it is installed.</p> <p>Verify that piping that conveys regulated substances under pressure is also equipped with an automatic line leak detector that meets the requirements of 40 CFR 280.44(a) (see ST.65.1.US.).</p> <p>Verify that, when existing piping is replaced or extended, the entire piping system</p>

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<p>ST.35.10.NC. All UST containment sumps installed or replaced after November 2007 must meet specific requirements (15A NCAC 2N.0905) [Added March 2008].</p>	<p>meet these standards.</p> <p>(NOTE: If only existing riser pipes, flexible connectors, fittings, flanges, valves or pumps are replaced, then only the replacement equipment must meet the standards of this Section.)</p> <p>Verify that, at the time of installation, the primary containment and interstitial space of the piping is initially tested, monitored during construction and finally tested in accordance with the manufacturers written guidelines and PEI/RP100, "Recommended Practice for Installation of Underground Liquid Storage Systems."</p> <p>Verify that piping that is not monitored continuously for releases using vacuum, pressure or hydrostatic methods, is tested for tightness every three years following installation.</p> <p>Verify that the most recent periodic tightness test record is maintained at the UST site or the tank owner or operator's place of business and is readily available for inspection.</p> <p>Verify that containment sumps are constructed of non-corroding materials.</p> <p>Verify that containment sumps are designed and manufactured expressly for the purpose of containing and detecting a release.</p> <p>Verify that containment sumps are designed, constructed, installed and maintained to prevent water infiltration.</p> <p>Verify that electronic sensor probes used for release detection monitoring are located no more than two inches above the lowest point of the containment sump.</p> <p>Verify that at installation, containment sumps are tested for tightness after construction, but before backfilling.</p> <p>Verify that, if a containment sump fails an installation tightness test, the sump is replaced or repaired by the manufacturer or the manufacturer's authorized representative in accordance with the manufacturer's specifications.</p> <p>Verify that containment sumps that are not monitored continuously for releases using vacuum, pressure or hydrostatic interstitial monitoring methods are tested for tightness every three years following installation in accordance with the manufacturers written guidelines and PEI/RP100, "Recommended Practice for Installation of Underground Liquid Storage Systems."</p> <p>Verify that the last periodic tightness test record is maintained at the UST site or the tank owner or operator's place of business and is readily available for inspection.</p>

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<p>ST.35.11.NC. All UST spill buckets installed or replaced after November 2007 must meet specific requirements (15A NCAC 2N.0905) [Added March 2008].</p>	<p>Verify that all containment sumps are visually inspected at least annually for the presence of water or regulated substance.</p> <p>Verify that any water or regulated substance is removed from the sump within 48 hours of discovery.</p> <p>Verify that the visual inspection results are documented and maintained for at least one year at the UST site or the tank owner's or operator's place of business.</p> <p>Verify that spill buckets are pre-fabricated with double-walled construction.</p> <p>Verify that spill buckets are protected from corrosion by being constructed of non-corroding materials.</p> <p>Verify that spill buckets are designed, constructed, installed and maintained to prevent water infiltration.</p> <p>Verify that after installation but before backfilling, the primary containment and interstitial space of the spill bucket is tested in accordance with the manufacturers written guidelines and PEI/RP100, "Recommended Practice for Installation of Underground Liquid Storage Systems."</p> <p>(NOTE: Any change in vacuum during a vacuum test or any change in liquid level in an interstitial space liquid reservoir beyond the limits specified by the equipment manufacturer shall be considered a failure of the integrity of the spill bucket.)</p> <p>Verify that spill buckets that are not monitored continuously for releases using vacuum, pressure or hydrostatic methods, are tested for tightness every three years following installation.</p> <p>Verify that the last periodic tightness test record is maintained at the UST site or the tank owner or operator's place of business.</p>

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<p>ST.60.</p> <p>RELEASE DETECTION FOR USTS</p> <p>ST.60.1.NC. Wells used for UST release detection must meet specific standards (15A NCAC 2N.0504(b) through (f)).</p>	<p>Verify that wells used for monitoring or testing for liquids on the groundwater meet the following standards:</p> <ul style="list-style-type: none"> - for new installations, are located within and at the end of the excavation having the lowest elevation and along piping at intervals not exceeding 50 ft - for existing installations, are located in the excavation zone or as near to it as technically feasible and installed in a borehole at least 4 in. larger than the diameter of the casing - is a minimum of 2 in. in diameter - the number of wells installed is sufficient to detect releases from the system - equipped with a screen that both: <ul style="list-style-type: none"> - extends from 2 ft below land surface to a depth of 20 ft below land surface or 2 ft below the seasonal low water level, whichever is shallower - is designed and installed to prevent migration of natural soils or filter pack into the well while allowing the entry of regulated substances under both high and low groundwater level conditions - surrounded with a clean sand or gravel to the top of the screen; plugged and grouted the remaining distance to finished grade with cement grout - constructed of a permanent casing and screen material that is inert to the stored substance and is corrosion resistant - developed upon completion of installation until the water is clear and relatively sediment free - protected with a water tight cover and lockable cap - labeled as a liquid monitor well - equipped with a continuously operating liquid leak detection device or the following testing is performed: <ul style="list-style-type: none"> - for tanks storing petroleum products, tested at least once every 14 days with a device or hydrocarbon-sensitive paste capable of detecting the liquid stored - for tanks storing hazardous substances, sampled and tested at least once every 14 days for the presence of the stored substance. <p>(NOTE: Wells used for monitoring or testing for liquids on groundwater at new installations and constructed in accordance with these requirements are deemed to be permitted in accordance with the requirements of 15A NCAC 2C.0105.)</p> <p>Verify that site assessments required by 40 CFR 280.43(e)(6) and 40 CFR 280.43(f)(7) are conducted by or under the supervision of a person qualified to assess site conditions.</p> <p>Verify that wells used for monitoring for the presence of vapors in soil gas of the excavation zone are equipped with a continuously operating vapor detection</p>

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	device or tested at least once every 14 days for the presence of the substance stored.

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ST.80. UST RELEASES ST.80.1.NC. Free product removal from UST releases and subsequent reporting requirements must be met (15A NCAC 2N.0703) [Added May 1999]. ST.80.2.NC. Initial site characterization information for UST releases must be submitted on time (15A NCAC 2N.0704) [Added May 1999]. ST.80.3.NC. Specific requirements must be met for petroleum USTs releases to, or in proximity to, State groundwaters (15A NCAC 2L.0403 and 2L.0404) [Added May 1999; Revised March 2007].	<p>(NOTE: The provisions for "Initial abatement measures and site check" contained in 40 CFR 280.62 (Subpart F) have been adopted by reference in accordance with G.S. 150B-14(c), except that: (1) 40 CFR 280.62(a)(6) is rewritten to read, "Investigate to determine the possible presence of free product, and begin free product removal within 14 days in accordance with 40 CFR 280.64, unless approval for an extension of time has been granted by the Division upon a showing of good cause, prior to the expiration of the time period"; and (2) In 40 CFR 280.62(b) the words, "or within another reasonable period of time determined by the implementing agency," are not adopted by reference.)</p> <p>Verify that free product removal begins within 14 days of initial site check or in accordance with any extension approved by the Division.</p> <p>Verify that, within 20 days after release confirmation, a report summarizing the initial abatement steps and any resulting information or data is submitted to the Division.</p> <p>(NOTE: The provisions for "Initial site characterization" contained in 40 CFR 280.63 (Subpart F) have been adopted by reference in accordance with G.S. 150B-14(c), except that in 40 CFR 280.63(b) the words, "or another reasonable period of time determined by the implementing agency," are replaced by the words, "unless prior approval has been granted by the Division upon a showing of good cause, before the 45 days have expired.")</p> <p>Verify that the initial site characterization information is submitted before 45 days has expired since the release confirmation unless prior approval has been granted by the Division.</p> <p>(NOTE: This checklist item applies to any discharge or release from a "commercial underground storage tank" or a "noncommercial underground storage tank," (see Definitions). It also applies to any other person responsible for the assessment or cleanup of a discharge or release from an underground storage tank, including any person who has conducted or controlled an activity which results in the discharge or release of petroleum or petroleum products.)</p> <p>Verify that immediate action is taken to prevent any further discharge or release of petroleum from the UST.</p> <p>Verify that any fire, explosion or vapor hazard is identified and mitigated.</p>

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<p>ST.80.4.NC. Petroleum USTs releases to, or in proximity to, State groundwaters must meet specific requirements to determine risk classification (15A NCAC 2L.0405) [Added May 1999; Revised March 2007].</p>	<p>Verify that any free product is removed.</p> <p>Verify that, within 90 days of the discovery of a discharge or release, a soil contamination report is submitted containing information sufficient to show that remaining unsaturated soil in the side walls and at the base of the excavation does not contain contaminant levels that exceed either the "soil-to-groundwater" or the residential maximum soil contaminant concentrations established by the Department, whichever is lower.</p> <p>(NOTE: If such showing is made, the discharge or release is classified as low risk by the Department.)</p> <p>Verify that, if the low risk showing cannot be made (see ST.80.3.NC.), a report containing information needed by the Department to classify the level of risk to human health and the environment posed by a discharge or release is submitted within 120 days of the discovery of the discharge or release, or within the time limit approved by the Department.</p> <p>Determine the risk classification assigned by the Department.</p> <p>(NOTE: See Appendix 10-3 for definition of High, Intermediate, and Low Risk.)</p>
<p>ST.80.5.NC. Specific requirements must be met for petroleum USTs releases determined to be High Risk (15A NCAC 2L.0407(b) and 2L.0408(4)) [Added May 1999].</p>	<p>(NOTE: The goal of any required corrective action for groundwater contamination is restoration to the level of the groundwater standards set forth in 15A NCAC 2L.0202, or as closely thereto as is economically and technologically feasible. In any corrective action plan submitted, natural attenuation must be used to the maximum extent possible. If the responsible party demonstrates that natural attenuation prevents the further migration of the plume, the Department may approve a groundwater-monitoring plan.)</p> <p>Verify that, if the risk posed by a discharge or release is determined by the Department to be high risk, all assessment and cleanup requirements are met.</p> <p>Verify that, for a discharge or release classified by the Department as an high risk, a report is submitted demonstrating that soil contamination has been remediated to the lower of:</p> <ul style="list-style-type: none"> - the residential or industrial/commercial maximum soil contaminant concentration - the "soil-to-groundwater" maximum soil contaminant concentration that has been established by the Department.
<p>ST.80.6.NC. Specific requirements must be met for</p>	<p>Verify that, if the risk posed by a discharge or release is determined by the Department to be intermediate risk, all assessment and cleanup requirements are</p>

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<p>petroleum USTs releases determined to be Intermediate Risk (15A NCAC 2L.0407(c) and 2L.0408(4)) [Added May 1999; Revised March 2007].</p>	<p>met.</p> <p>Verify that, for a discharge or release classified by the Department as an intermediate risk, a report is submitted demonstrating that soil contamination has been remediated to the lower of:</p> <ul style="list-style-type: none"> - the residential or industrial/commercial maximum soil contaminant concentration - the "soil-to-groundwater" maximum soil contaminant concentration that has been established by the Department. <p>(NOTE: Discharges or releases which are classified as intermediate risk must be remediated, at a minimum, to a cleanup level of 50 percent of the solubility of the contaminant at 25 degrees C or 1000 times the groundwater standard or interim standard established in 15A NCAC 2L.0202, whichever is lower for any groundwater contaminant except ethylene dibromide, benzene and alkane and aromatic carbon fraction classes. Ethylene dibromide and benzene must be remediated to a cleanup level of 1000 times the Federal drinking water standard set out in 40 CFR 141.)</p>
<p>ST.80.7.NC. Specific requirements must be met for petroleum USTs releases determined to be Low Risk (15A NCAC 2L.0407(d) and 2L.0408 (3)) [Added May 1999; Revised March 2007].</p>	<p>Verify that, for a discharge or release classified by the Department as low risk, a report is submitted demonstrating that soil contamination has been remediated to either the residential or industrial/commercial maximum soil contaminant concentration established by the Department.</p> <p>Verify that notification that no cleanup or no further action is required has been received from the Department.</p> <p>(NOTE: No notification will be issued until the responsible party has completed soil remediation.)</p>
<p>ST.80.8.NC. Notification requirements must be met for specific UST corrective action plans (15A NCAC 2L.0409 (a)) [Added May 1999; Revised March 2007].</p>	<p>Verify that notice is given when a corrective action plan is submitted which proposes any of the following:</p> <ul style="list-style-type: none"> - natural attenuation - cleanup groundwater contamination to a standard other than a standard or interim standard established in 15A NCAC 2L.0202 - cleanup soil to a standard other than the standard for residential use or soil-to-groundwater contaminant concentration. <p>Verify that notice describing the nature of the plan and the reasons supporting it is given to the following:</p> <ul style="list-style-type: none"> - the local Health Director - the chief administrative officer of each political jurisdiction in which the contamination occurs

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<p>ST.80.9.NC. Notification requirements must be met when petroleum UST corrective action standards are not met (15A NCAC 2L.0409 (b)) [Added May 1999; Revised March 2007].</p>	<ul style="list-style-type: none"> - all property owners and occupants within or contiguous to the area containing the contamination - all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. <p>Verify that notification is made by certified mail concurrent with the submittal of the corrective action plan.</p> <p>Verify that (within a time frame determined by the Department) the Department is provided with a copy of the notice and proof of receipt of each required notice, or of refusal by the addressee to accept delivery of a required notice.</p> <p>(NOTE: If notice by certified mail to occupants is impractical, the notice may be posting prominently in a manner designed to give actual notice to the occupants. If notice is made to occupants by posting, a copy of the posted notice and a description of the manner in which such posted notice was given must be submitted to the Department.)</p> <p>Determine if notice has been received from the Department, that a discharge or release has not been remediated to the groundwater standards or to the lower of the residential or soil-to-groundwater contaminant concentrations.</p> <p>Verify that, within 30 days of receipt of notice from the Department, a copy of the notice is provided to the following:</p> <ul style="list-style-type: none"> - the local Health Director - the chief administrative officer of each political jurisdiction in which the contamination occurs - all property owners and occupants within or contiguous to the area containing contamination - all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. <p>Verify that notification is made by certified mail.</p> <p>Verify that (within a time frame determined by the Department) the Department is provided with a copy of the notice and proof of receipt of each required notice, or of refusal by the addressee to accept delivery of a required notice.</p> <p>(NOTE: If notice by certified mail to occupants is impractical, the notice may be posting prominently in a manner designed to give actual notice to the occupants. If notice is made to occupants by posting, a copy of the posted notice and a description of the manner in which such posted notice was given must be submitted to the Department.)</p>

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<p>ST.90.</p> <p>UST DOCUMENTATION</p> <p>ST.90.1.NC. UST systems must meet reporting requirements (15A NCAC 2N.0302(b) and 2N.0405(b)).</p>	<p>Verify that a description of the upgrading of a UST system is submitted to the Division within 30 days following completion.</p> <p>Verify that site investigation results are submitted to the Division within 30 days following completion.</p> <p>(NOTE: Site investigations are conducted either at permanent closure or to ensure compliance with requirements for installation of vapor monitoring and groundwater monitoring devices, as specified in 40 CFR 280.43(c)(1) through (e)(4) and 280.43(f)(1) through (f)(5), respectively.</p> <p>Verify that, within 30 days following completion, the following are submitted to the Division:</p> <ul style="list-style-type: none"> - description of the upgrading of any UST system conducted in accordance with the requirements of 40 CFR 280.21 - certification of the proper operation of a corrosion protection system upon completion of testing and at a frequency and in a manner specified in 40 CFR 280.31 - certification of compliance with requirements for leak detection specified in 40 CFR 280.40, 40 CFR 280.41, 40 CFR 280.42, 40 CFR 280.43 and 40 CFR 280.44 specifying the leak detection method and date of compliance for each UST.

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<p>ST.95.</p> <p>CHANGES IN SERVICE OR CLOSURE OF USTS</p> <p>ST.95.1.NC. Site assessments must be conducted by persons qualified to assess site conditions (15A NCAC 2N.0803(2) and (3)).</p>	<p>Verify that site assessments are conducted only by persons qualified to assess site conditions.</p> <p>Verify that persons conducting site assessments adhere to the number, location, and methods of samples specified by the Department.</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010	
ST.139. USED OIL STORAGE TANKS		
ST.139.1.NC. March 2004].	[Deleted	(NOTE: Requirements are found in PO.95.1.NC.)
ST.139.2.NC. March 2004].	[Deleted	(NOTE: Requirements are found in PO.60.1.NC.)

Appendix 10-1

Federal Regulations Adopted by Reference

(15A NCAC 2N) [Revised March 2007; Revised March 2008].

The following portions of Title 40, Code of Federal Regulations (40 CFR), regarding underground storage tanks (USTs) have been adopted by reference:

- 15A NCAC 2N.0201: the provisions for "Applicability" contained in 40 CFR 280.10 (Subpart A) are hereby incorporated by reference including subsequent amendments and editions except that:
 1. Underground storage tanks containing de minimus concentrations of regulated substances are subject to the requirements for permanent closure in Rules .0802 and .0803 of this Subchapter;
 2. UST systems defined at 40 CFR 280.10(c) are exempted from meeting the requirements of Section .0900 of this Subchapter; and
 3. UST systems defined at 40 CFR 280.10(d) are subject to all of the requirements of Section .0900 of this Subchapter.
- 15A NCAC 2N.0202: the provisions for "Interim Prohibition for deferred UST systems" contained in 40 CFR 280.11 (Subpart A)
- 15A NCAC 2N.0203: the definitions contained in 40 CFR 280.12 (Subpart A). This Rule applies throughout the UST requirements, except that:
 1. "Implementing agency" means the "Division of Waste Management"
 2. "Division" means the "Division of Waste Management"
 3. "Director" and "Director of the Implementing Agency" mean the "Director of the Division of Waste Management"
- 15A NCAC 2N.0301(a): the "Performance standards for new UST systems" contained in 40 CFR 280.20 (Subpart B), except that:
 1. 40 CFR 280.20(a)(4) is not incorporated by reference;
 2. 40 CFR 280.20(b)(3) is not incorporated by reference; and
 3. UST system or UST system component installations or replacements completed on or after November 1, 2007, shall meet the requirements of Section .0900 of this Subchapter.
- 15A NCAC 2N.0302(b): the provisions for "Upgrading of existing UST systems" contained in 40 CFR 280.21 (Subpart B), except that existing UST systems located within areas defined as follows are upgraded in accordance with the provisions of 40 CFR 280.21(b) through (d) and are provided secondary containment as described at 40 CFR 280.42(b)(1) through (4):
 1. within 100 ft of a well serving a public water system or within 50 ft of any other well supplying water for human consumption
 2. installed within one of the following areas:
 - a. within 500 ft of a well serving a public water supply or within 100 ft of any other well supplying water for human consumption
 - b. within 500 ft of any surface water classified as High Quality Water (HQW), Outstanding Resource Waters (ORW), WS-I, WS-II, or SA
 - c. in a location determined by the Director to be unsuitable for conventional installation based on an evaluation of the site by Division staff.A UST system so upgraded may not be relocated nearer to a source of drinking water supply than its location prior to being upgraded.
- 15A NCAC 2N.0303: the "Notification requirements" contained in 40 CFR 280.22 (Subpart B), except that:
 1. any owner of a UST system must submit to the Division, on forms provided by the Division, a notice of intent to conduct any of the following activities:
 - a. installation of a new UST system
 - b. installation of a leak detection device installed outside of the outermost wall of the tank and piping, such as vapor detection or groundwater monitoring devices
 - c. permanent closure or change-in-service of a UST system
 2. notification is given at least 30 days before the activity is begun, except as authorized by the Director

3. owners or operators of UST systems that were in the ground on or after 8 May 1986, were required to notify the Division in accordance with the *Hazardous and Solid Waste Amendments* of 1984, Public Law 98-616, on a form published by the USEPA on 8 November 1985 (50 Federal Register 46602) unless notice was given pursuant to Section 103(c) of CERCLA. Owners or operators who have not complied with the notification requirements may complete the appropriate portions of the form, provided by the Division, and submit the form to the Division
 4. beginning 24 October 1988, any person who sells a tank intended to be used as a UST must notify the purchaser of the owner's notification obligations under Paragraphs (1) and (2) above
 5. any reference in 40 CFR 280 to the notification form in Appendix I refers to the North Carolina notification form approved by the Division and USEPA.
- 15A NCAC 2N.0401: the provisions for "Spill and overfill control" contained in 40 CFR 280.30 (Subpart C)
 - 15A NCAC 2N.0402: the provisions for "Operation and maintenance of corrosion protection" contained in 40 CFR 280.31 (Subpart C)
 - 15A NCAC 2N.0403: the provisions for "Compatibility" contained in 40 CFR 280.32 (Subpart C)
 - 15A NCAC 2N.0404: the "Repairs allowed" provisions contained in 40 CFR 280.33 (Subpart C) .
 - 15A NCAC 2N.0405: the "Reporting and recordkeeping" procedures contained in 40 CFR 280.34 (Subpart C) .
 - 15A NCAC 2N.0501: the "General requirements for all UST systems" provisions contained in 40 CFR 280.40 (Subpart D) .
 - 15A NCAC 2N.0502: The "Requirements for petroleum UST systems" provisions contained in 40 CFR 280.41 (Subpart D) are hereby incorporated by reference including subsequent amendments and editions except that UST systems located within areas defined in Rule .0301(d) of this Subchapter must meet the requirements for secondary containment described at 40 CFR 280.42(b)(1) through (4) if the UST system installation or replacement was completed before November 1, 2007. UST system or UST system component installations or replacements completed on or after November 1, 2007, must meet the secondary containment requirements of Section . 0900 of this Subchapter
 - 15A NCAC 2N.0503: the "Requirements for hazardous substance UST systems" provisions contained in 40 CFR 280.42 (Subpart D) except that hazardous substance UST systems or UST system components installed or replacements completed on or after November 1, 2007 must meet the secondary containment requirements of Section . 0900 of this Subchapter
 - 15A NCAC 2N.0504: the "Methods of release detection for tanks" contained in 40 CFR 280.43 (Subpart D), except:
 1. 40 CFR 280.43(d)(2) is amended to read: "Inventory control, or another test of equivalent performance approved by the Department, conducted in accordance with the requirements of 40 CFR 280.43(a)"
 2. 40 CFR 280.43(f)(7) is amended to read: "Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements of 40 CFR 280.43(f)(1) through (f)(5), as modified by this Rule, and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains products"
 3. 40 CFR 280.43(f)(3), (f)(4), and (f)(5) are not adopted by reference.
 - 15A NCAC 2N.0505: the "Methods of release detection for piping" provisions contained in 40 CFR 280.44 (Subpart D)
 - 15A NCAC 2N.0506: the provisions for "Release detection recordkeeping" contained in 40 CFR 280.45 (Subpart D)
 - 15A NCAC 2N.0601: the provisions for "Reporting of suspected releases" contained in 40 CFR 280.50 (Subpart E), except that the words, "or another reasonable time period specified by the implementing agent," are deleted from the first
 - 15A NCAC 2N.0602: the "Investigation due to off-site impacts" provisions contained in 40 CFR 280.51 (Subpart E)
 - 15A NCAC 2N.0603: the "Release investigation and confirmation steps" provisions contained in 40 CFR 280.52 (Subpart E), except that the first sentence has been rewritten to read: "Unless corrective action is initiated in accordance with Subpart F, owners must immediately investigate and confirm all suspected releases of regulated substances requiring reporting under 40 CFR 280.50 within 7 days, unless approval for an extension of time has been granted by the Division before the 7 days have expired, and only upon a showing of good cause by the owner or operator of the UST system. In conducting such investigations, owners and operators must use either the following steps or another procedure approved by the Division."

- 15A NCAC 2N.0604: the “Reporting and cleanup of spills and overfills” provisions contained in 40 CFR 280.53 (Subpart E), except that:
 1. in 40 CFR 280.53(a) and (b), the words, “or another reasonable time period specified by the implementing agency,” are not adopted by reference
 2. in 40 CFR 280.53(a)(1) and (b), the words, “or another reasonable amount specified by the implementing agency” are not adopted by reference
 3. the time periods within which reports required by the provisions of 40 CFR 280.53 must be submitted to the Division may be extended upon approval of requests made to the Division by the owner or operator, before the expiration of the time period and upon a showing of good cause
- 15A NCAC 2N.0701: the “General” provisions contained in 40 CFR 280.60 (Subpart F)
- 15A NCAC 2N.0702: the provisions for “Initial response” contained in 40 CFR 280.61 (Subpart F), except that the words, “or another reasonable time period specified by the implementing agency,” in the first sentence are not adopted by reference
- 15A NCAC 2N.0703: the provisions for “Initial abatement measures and site check” contained in 40 CFR 280.62 (Subpart F), except that both:
 1. 40 CFR 280.62(a)(6) is rewritten to read, “Investigate to determine the possible presence of free product, and begin free product removal within 14 days in accordance with 40 CFR 280.64, unless approval for an extension of time has been granted by the Division upon a showing of good cause, prior to the expiration of the time period”; and
 2. in 40 CFR 280.62(b) the words, “or within another reasonable period of time determined by the implementing agency,” are not adopted by reference
- 15A NCAC 2N.0704: The provisions for "Initial site characterization" contained in 40 CFR 280.63 (Subpart F) have been adopted by reference in accordance with G.S. 150B-14(c), except that in 40 CFR 280.63(b) the words, "or another reasonable period of time determined by the implementing agency," are replaced by the words, "unless prior approval has been granted by the Division upon a showing of good cause, before the 45 days have expired."
- 15A NCAC 2N.0705: the provisions for “Free product removal” contained in 40 CFR 280.64 (Subpart F)
- 15A NCAC 2N.0706: the provisions for “Investigations for soil and ground- water cleanup” contained in 40 CFR 280.65 (Subpart F)0706
- 15A NCAC 2N.0707: the for a “Corrective action plan” contained in 40 CFR 280.66 (Subpart F), with the exception that 40 CFR 280.66(a) has been rewritten to read: “At any point after reviewing the information submitted in compliance with 40 CFR 280.61 through 40 CFR 280.63, the Division may require owners and operators to submit additional information or to develop and submit a corrective action plan for responding to contaminated soils and groundwater. If a plan is required, owners and operators must prepare a plan in accordance with the requirements specified in 15A NCAC 2L.0106, and submit it according to a schedule and format established by the Division. Owners and operators are responsible for submitting a plan that provides for adequate protection of human health and the environment as determined by the Division, and must modify their plan as necessary to meet this standard”.
- 15A NCAC 2N.0708: the provisions for “Public participation” contained in 40 CFR 280.67 (Subpart F)
- 15A NCAC 2N.0801: the provisions for “Temporary closure” contained in 40 CFR 280.70 (Subpart G)
- 15A NCAC 2N.0802: the provisions for “Permanent closure and changes-in- service” contained in 40 CFR 280.71 (Subpart G), except that a UST system containing de minimis concentration of a regulated substance must meet the closure requirements of this Rule within 12 mo of 1 January 1991
- 15A NCAC 2N.0803: the provisions for “Assessing the site at closure or change-in-service” contained in 40 CFR 280.72 (Subpart G), except that:
 1. references to methods and requirements have been expanded to include all applicable references and methods listed in 15A NCAC 2N.0504
 2. site assessments shall be conducted by a person qualified to assess site conditions
 3. the number and location of samples, and method of their collections shall be determined in accordance with procedures established by the Department
- 15A NCAC 2N.0804: the “Applicability to previously closed UST systems” provisions contained in 40 CFR 280.73 (Subpart G)
- 15A NCAC 2N.0805: the “Closure records” provisions contained in 40 CFR 280.74 (Subpart G).

Appendix 10-2

Compliance Schedule for Stage II Vapor Recovery Systems

(Source: 15A NCAC 2D.0954(f)) [Deleted March 2009].

(NOTE: 15A NCAC 2D.0954 repealed.)

Appendix 10-3

Risk Classification of UST Releases to the Groundwater of the State (Source: 15A NCAC 2L.0406) [Added May 1999; Citation Revised March 2007]

High Risk means that:

1. a water supply well, including one used for non-drinking purposes, has been contaminated by the release or discharge;
2. a water supply well used for drinking water is located within 1000 ft of the source area of a confirmed discharge or release;
3. a water supply well not used for drinking water is located within 250 ft of the source area of a confirmed discharge or release;
4. the groundwater within 500 ft of the source area of a confirmed discharge or release has the potential for future use in that there is no source of water supply other than the groundwater;
5. the vapors from the discharge or release pose a serious threat of explosion due to accumulation of the vapors in a confined space; or
6. the discharge or release poses an imminent danger to public health, public safety, or the environment.

Intermediate Risk means that:

1. surface water is located within 500 ft of the source area of a confirmed discharge or release and the maximum groundwater contaminant concentration exceeds the applicable surface water quality standards and criteria found in 15A NCAC 2B.0200 by a factor of 10;
2. in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985, the source area of a confirmed discharge or release is located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer which the Department determines is being used or may be used as a source of drinking water;
3. the source area of a confirmed discharge or release is within a designated wellhead protection area, as defined in 42 USC 300h-7(e);
4. the levels of groundwater contamination for any contaminant except ethylene dibromide, benzene and alkane and aromatic carbon fraction classes exceed 50 percent of the solubility of the contaminant at 25 °C or 1000 times the groundwater standard or interim standard established in 15A NCAC 2L.0202, whichever is lower; or
5. the levels of groundwater contamination for ethylene dibromide and benzene exceed 1000 times the Federal drinking water standard set out in 40 CFR 141.

Low Risk means that:

1. the risk posed does not fall within the high or intermediate risk categories; or
2. based on review of site-specific information, limited assessment or interim corrective actions, the Department determines that the discharge or release poses no significant risk to human health or the environment.

(NOTE: If the criteria for more than one risk category applies, the discharge or release shall be classified at the highest applicable risk category unless the Department has reclassified the discharge or release pursuant to Paragraph (e) of this Rule.)

SECTION 11
TOXIC SUBSTANCES MANAGEMENT
North Carolina Supplement, March 2010

This section covers the state requirements for Toxic Substances Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Regulations Adopted by Reference

The following regulations from Title 40 Code of Federal Regulations (40 CFR) have been incorporated by reference by North Carolina, including subsequent amendments and editions [Revised March 2008]:

- 40 CFR Part 61, subparts A and M (10A NCAC 41C.0609 (a))
- 40 CFR Part 745, Subpart D and Subpart L (10A NCAC 41C.0801 (b))
- 40 CFR Part 763, Subpart E. (10A NCAC 41C.0601 (b))

Definitions

- *Design* - a written or graphic plan prepared by a certified project designer specifying how an abatement project will be performed, and includes, but is not limited to, scope of work and technical specifications. The certified project designer's signature and certification number shall be on all such abatement designs (Title 10A, North Carolina Administrative Code, Subchapter 41C Section .0801(a) (10A NCAC 41C.0801 (a)) [Added February 1999; Citation Revised March 2008].
- *Emergency Lead-Based Paint Abatement* - abatement conducted to remediate a lead-based paint hazard which has been determined by a certified risk assessor and the Program to be an imminent lead-based paint hazard to building occupants in a child occupied facility (10A NCAC 41C.0801(a)) [Added March 2010].
- *Immediate Family* - an individual's family members limited to spouse, parents, siblings, grandparents, children, and grandchildren (10A NCAC 41C.0801(a)) [Added March 2010].
- *Occupant Protection Plan* - a written plan which describes the measures and management procedures that will be taken during abatement to protect building occupants from exposure to lead-based paint hazards. The plan shall be unique to each residential dwelling or child-occupied facility. For projects less than five units, the plan shall be prepared by a certified supervisor or project designer. For projects with five or more units, the plan shall be prepared by a certified project designer. The plan shall include the preparer's signature and certification number (10A NCAC 41C.0801(a)) [Added March 2008].
- *Program* - the Lead-Based Paint Hazard Management Program within the NC Department of Health and Human Services (10A NCAC 41C.0801(a)) [Added February 1999; Citation Revised March 2008].
- *Start Date* - the date on which activities begin on a permitted lead abatement project requiring the use of certified individuals, including the abatement area isolation and preparation or any other activity which may disturb lead-based paint (10A NCAC 41C.0801(a)) [Added March 2010].
- *Working Day* - Monday through Friday. Holidays falling on any of these days are working days (10A NCAC 41C.0801 (a)) [Added March 2010].

- *Certified Industrial Hygienist* - a person who has met the education, experience, and examination requirements established by the American Board of Industrial Hygiene for certified industrial hygienists and whose certification has not been revoked by that organization (10A NCAC 41C.0801(a)) [Added March 2010].

**TOXIC SUBSTANCES MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

PCB Management

Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Missing Checklist Items T1.2.1.NC.

Asbestos Management

Missing Checklist Items T2.2.1.NC.

Asbestos Disposal T2.15.1.NC.

Radon Management

Refer to the U.S. TEAM Guide and the DOD Component Supplements for DOD and service-specific requirements.

Missing Checklist Items T3.2.1.NC.

Lead-Based Paint Management

Missing Checklist Items T4.2.1.NC.

Work-Practice Standards T4.20.1.NC. through T4.20.5.NC.

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
PCB MANAGEMENT T1.2. Missing Checklist Items T1.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
ASBESTOS MANAGEMENT T2.2. Missing Checklist Items T2.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>T2.15.</p> <p>ASBESTOS DISPOSAL</p> <p>T2.15.1.NC. A municipal solid waste landfill (MSWLF) must meet certain operational requirements when disposing of asbestos (15A NCAC 13B.1626(1)(d)).</p>	<p>Verify that asbestos waste is managed in accordance with 40 CFR 61.</p> <p>Verify that the asbestos waste at a MSWLF is covered immediately with soil in a manner that will not cause it to become airborne and disposed of separate and apart from other solid wastes either:</p> <ul style="list-style-type: none"> - at the bottom of the working face - in an area not contiguous with other disposal areas. <p>Verify that asbestos disposal areas are clearly designated so that asbestos is not exposed by future land-disturbing activities.</p>

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
RADON GAS T3.2. Missing Checklist Items T3.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
LEAD-BASED PAINT T4.2. Missing Checklist Items T4.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
LBP MANAGEMENT T4.20. Work Practice Standards T4.20.1.NC. [Deleted February 1999]. T4.20.2.NC. Persons conducting LBP abatement must be certified (10A NCAC 41C.0802 (a) and 41C.0803 (a) 41C.0902 (a) and 41C.0903 (a))) [Added February 1999; Citation Revised March 2008; Revised March 2010]. T4.20.3.NC. LBP abatement activities must meet specific standards (10A NCAC 41C.0807) [Added February 1999; Citation Revised March 2007; Citation Revised March 2008]. T4.20.4.NC. LBP abatement activities must be permitted and meet specific requirements (10A NCAC 41C.0808(a), (e), and (g)) [Added February 1999; Revised March 2008].	<p>(NOTE: This checklist item applied to lead-based paint abatement as part of the "Lead Poisoning in Children Prevention Program." See below for lead-based paint requirements that apply to all lead-based paint abatements.)</p> <p>Verify that anyone who performs lead-based paint activities has been certified by the Program in the appropriate certification category.</p> <p>Verify that anyone who performs lead-based paint renovation activities for compensation in target housing and child-occupied facilities has been certified by the Program in the applicable certification category.</p> <p>Verify that all firms who conduct lead-based paint activities are certified by the Program.</p> <p>Verify that all lead-based paint activities and design activities are conducted in accordance with 40 CFR 745 Subpart L, Subsection .227 (see the <i>Toxic Substances Management</i> chapter in the U.S. TEAM Guide).</p> <p>Verify that for each inspection, risk assessment, or lead hazard screen conducted, the certified inspector or risk assessor submits to the Program a legible copy of the summary of the activity on a form provided or approved by the Program.</p> <p>Verify that the form is submitted within 45 days of the activity.</p> <p>Verify that no person conducts abatement without an abatement permit issued by the Program.</p> <p>Verify that the following are maintained on site during abatement activities and are immediately available for review by the Program:</p> <ul style="list-style-type: none"> - a copy of the abatement permit issued by the Program and all revisions with the Program's confirmation of receipt - photo identification cards issued by the Program for all personnel performing lead abatement activities - the occupant protection plan - any applicable abatement design, risk assessment and inspection reports.

COMPLIANCE CATEGORY: TOXIC SUBSTANCES MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>T4.20.5.NC. LBP renovation activities in target housing and child-occupied facilities must meet specific requirements (10A NCAC 41C.0906 and 41C.0907) [Added March 2010].</p>	<p>Verify that a certified supervisor is on-site at all times when permitted abatement activities are being conducted.</p> <p>Verify that all lead-based paint renovation activities performed for compensation in target housing and child-occupied facilities is conducted in accordance with 40 CFR 745 Subpart E, Subsections .85 and .90.</p> <p>Verify that all certified renovation firms using USEPA-recognized test kits prior to conducting renovation activities in target housing and child-occupied facilities provide in writing to the person who contracted for the renovation the identifying information as to the manufacturer and model of the test kits used, a description of the components that were tested including their locations, and the test kit results.</p> <p>Verify that the above information is provided prior to the start of the renovation activities.</p>

SECTION 12

WASTEWATER MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Wastewater Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Regulations Adopted by Reference

North Carolina adopts by reference the following regulations found in the Code of Federal Regulations, Title 40 (40 CFR):

- 40 CFR 129 -- USEPA Toxic Pollutant Effluent Standards
- 40 CFR 401 -- USEPA General Provisions for Effluent Guidelines and Standards
- 40 CFR 403.5 -- National prohibited pretreatment standards and local limits development and enforcement
- 40 CFR 403.6 -- National categorical pretreatment standards
- 40 CFR Part 403.8(a) through 40 CFR Part 403.8(e) -- National Pretreatment Standards
- 40 CFR Part 403.13 -- Variances from national categorical pretreatment standards for fundamentally different factors
- 40 CFR 403.16 -- Upset provision
- 40 CFR 403.17 -- USEPA bypass provisions
- 40 CFR 405 -- USEPA Effluent Guidelines and Standards for Dairy Products
- 40 CFR 407 -- USEPA Effluent Guidelines and Standards for Canned and Preserved Fruits and Vegetables
- 40 CFR 413 -- USEPA Effluent Guidelines and Standards for Electroplating
- 40 CFR 414 -- USEPA Effluent Guidelines and Standards for Organic Chemicals
- 40 CFR 415 -- USEPA Effluent Guidelines and Standards for Inorganic Chemicals
- 40 CFR 423 -- USEPA Effluent Guidelines and Standards for Steam Electric Power Generating
- 40 CFR 429 -- USEPA Effluent Guidelines and Standards for Timber Products
- 40 CFR 460 -- USEPA Effluent Guidelines and Standards for Hospitals

Definitions

- *Agronomic Rate* - the amount of waste and other materials applied to meet the nitrogen needs of the crop, but does not overload the soil with nutrients or other constituents that cause or contribute to a contravention of surface water or groundwater standards, limit crop growth, or adversely impact soil quality. Nitrogen needs of the crop shall be based on realistic yield expectations (RYE) established for a soil series through published Cooperative Extension Service bulletins, Natural Resources Conservation Service publications, county soil surveys, or site specific agronomist reports (15A NCAC 2T.0103) [Added March 2007].
- *Agronomic Rates* - those rates that provide the nitrogen and other nutrient needs of the crop based on available realistic yield expectations (RYE) established for a soil series through published Cooperative Extension Service bulletins, Natural Resources Conservation Service publications or county soil surveys, but do not overload the soil with nutrients or other constituents which may eventually leach to groundwater, limit crop growth, or adversely impact soil quality (15A NCAC 13B.0831) [Added March 2010].
- *Aerobic Digestion* - the biochemical decomposition of organic matter in residuals into carbon dioxide and water by microorganisms in the presence of air. (15A NCAC 2T.1102) [Added March 2007].

- *Agricultural Land* - land on which a food crop, feed crop, or fiber crop is grown (15A NCAC 2T.1102) [Added March 2007].
- *Agronomic Rates* - those amounts of animal waste or compost to be applied to lands as contained in the nutrient management standard of the USDA Soil Conservation Service Technical Guide Section IV or as recommended by the North Carolina Department of Agriculture and the North Carolina Cooperative Extension Service at the time of certification of the animal waste management plan (15A NCAC 6F.0102) [Added March 2007].
- *Alternative Sewer System* - any sewer system (collection system) other than a gravity system or standard pump station and force main. These include pressure sewer systems, septic tank/effluent pump (STEP) sewer systems, vacuum sewer system, and small diameter variable grade gravity sewers (15A NCAC 2T.0302) [Added March 2007].
- *Anaerobic Digestion* - the biochemical decomposition of organic matter in residuals into methane gas and carbon dioxide by microorganisms in the absence of air (15A NCAC 2T.1102) [Added March 2007].
- *Animal* - livestock or poultry excreta or a mixture of excreta with feed, bedding, litter or other materials generated at a feedlot (15A NCAC 2T.0103) [Added March 2007].
- *Animal Waste* - livestock or poultry excreta or a mixture of excreta with feed, bedding, litter, or other materials generated at the feedlot (15A NCAC 2T.0103) [Revised March 2007].
- *Animal Waste Management Plan* - a plan to properly collect, store, treat, or apply animal waste to the land in an environmentally safe manner developed in accordance with GS 143-215.10C (15A NCAC 2T.1302) [Revised March 2007].
- *Annual Septage Application Rate* - the maximum amount, in gallons, of septage that can be applied to a unit area of land during a 365-day period (15A NCAC 13B.0831) [Added March 2010].
- *Approval Authority* - the Director of the Division of Environmental Management of the North Carolina Department of Environment, Health, and Natural Resources, or his/her designee (15A NCAC 2H.0903).
- *Approved* - that which the State or local health department has determined is in accordance with this Section and G.S. 130A, Article 11 (15A NCAC 18A.1935) [Added March 2004; Revised March 2007].
- *Approved Privy* - a fly-tight structure consisting of a pit, floor slab, and seat riser constructed in accordance with Rule .1959 of this Section (15A NCAC 18A.1935) [Added March 2004].
- *Areas Subject to Frequent Flooding* - those areas inundated at a 10-yr or less frequency and includes alluvial soils and areas subject to tidal or storm overwash (15A NCAC 18A.1935).
- *Bag And Other Container* - a bag, bucket, bin, box, carton, vehicle, trailer, tanker, or an open or closed receptacle with a load capacity of 1.102 short tons or one metric ton or less (15A NCAC 2T.1102) [Added March 2007].
- *Base Flood* - a flood that has a one percent change of occurring in any given year (i.e., a flood with a magnitude equaled once in 100 years) (15A NCAC 2T.1102) [Added March 2007].
- *Bedrock* - any consolidated or coherent and relatively hard, naturally-formed mass of mineral matter which cannot be readily excavated without the use of explosives or power equipment (15A NCAC 2L.0102) [Citation Revised March 2007].
- *Biological Residuals* - residuals that have been generated during the treatment of domestic wastewater, the treatment of animal processing wastewater, or the biological treatment of industrial wastewater (15A NCAC 2T.1102) [Added March 2007].

- *Biological Treatment* - treatment in a system that utilizes biological processes that shall include lagoons, activated sludge systems, extended aeration systems, and fixed film systems (15A NCAC 2T.1102) [Added March 2007].
- *Buffer* - a natural or vegetated area as defined in 15A NCAC 02B .0202 (15A NCAC 2T.0103) [Added March 2007].
- *Building* - any structure occupied or intended for supporting or sheltering any occupancy (15A NCAC 2T.0302) [Revised March 2007].
- *Building Drain* - that part of the lowest piping of a drainage system that receives the discharge from soil, waste and other drainage pipes that extends 10 feet beyond the walls of the building and conveys the drainage to the building sewer (15A NCAC 2T.0302) [Revised March 2007].
- *Building Sewer* - that part of the drainage system that extends from the end of the building drain and conveys the discharge from a single building to a public gravity sewer, private gravity sewer, individual sewage disposal system or other point of disposal. (15A NCAC 2T.0302) [Revised March 2007].
- *Built-Up Area* - that portion of a development project that is covered by impervious or partially impervious cover including buildings, pavement, gravel roads and parking areas, recreation facilities (e.g., tennis courts), etc.(NOTE: Wooden slatted decks and the water area of a swimming pool are considered pervious) (15A NCAC 2H.1002).
- *Bulk Residuals* - residuals that are transported and not sold or given away in a bag or other container for application to the land (15A NCAC 2T.1102) [Added March 2007].
- *Bypass* - the intentional diversion of waste streams from any portion of a pretreatment facility (15A NCAC 2H.0903).
- *Class GA Groundwaters* (15A NCAC 2L.0201) [Added March 2006]:
 1. Best Usage. Existing or potential source of drinking water supply for humans.
 2. Conditions Related to Best Usage. This class is intended for those groundwaters in which chloride concentrations are equal to or less than 250 mg/l, and which are considered suitable for drinking in their natural state, but which may require treatment to improve quality related to natural conditions.
 3. Occurrence. In the saturated zone.
- *Class GC Groundwaters* (15A NCAC 2L.0201) [Added March 2006]:
 1. Best Usage. The best usage of GC groundwaters is as a source of water supply for purposes other than drinking, including other domestic uses by humans.
 2. Conditions Related to Best Usage. This class includes those groundwaters that do not meet the quality criteria for GA or GSA groundwaters and for which efforts to improve groundwater quality would not be technologically feasible, or not in the best interest of the public. Continued consumption of waters of this class by humans could result in adverse health affects.
 3. Occurrence. Groundwaters of this class may be defined by the Commission pursuant to Section .0300 of this Subchapter on a case by case basis.
- *Class GSA Groundwaters* (15A NCAC 2L.0201) [Added March 2006]:
 1. Best Usage. Existing or potential source of water supply for potable mineral water and conversion to fresh waters.
 2. Conditions Related to Best Usage. This class is intended for those groundwaters in which the chloride concentrations due to natural conditions is in excess of 250 mg/l, but which otherwise may be considered suitable for use as potable water after treatment to reduce concentrations of naturally occurring substances.
 3. Occurrence. In the saturated zone.

- *Closed-Loop Groundwater Remediation System*" is as defined in G.S. 143-215.1A (15A NCAC 2T.1602) [Added March 2007].
- *Coastal Areas* - includes all of the following (15A NCAC 2H.0403):
 1. the Outer Banks
 2. those land areas bordering the coastal waters, including all waters assigned a salt water "S" classification and all tributaries that have experienced excessive growths of microscopic or macroscopic vegetation or that, because of their relative size and lack of water exchange are found by the commission to be subject to such excessive growths
 3. land areas bordering all natural impoundments situated east of the line established by the North Carolina Environmental Management Commission to designate coastal waters, said land being described as follows:

Extends from a point on the North Carolina/South Carolina state line near Calabash, North Carolina, generally along the lines of the Atlantic Coast Line Railroad and Norfolk Southern Railway, northeasterly and northerly to River Mile 66.0 (Lock No. 1) on the Cape Fear River; thence northerly to River Mile 30.0 on Black River; thence easterly to River Mile 48 on the North East Cape Fear River; thence northerly and easterly to River Mile 22.5 in New River; thence easterly and northerly to River Mile 25.0 on White Oak River (Atlantic Coast Line Railroad Bridge); thence northerly and easterly to River Mile 38.9 on Neuse River (Norfolk Southern Railway Bridge); thence northerly to River Mile 44.6 on Pamlico River (Norfolk Southern Railway Bridge); thence northeasterly and northerly crossing Albemarle Sound along Norfolk Southern Railway Bridge; thence northerly and easterly to River Mile 13.5 on Perquimans River (Norfolk Southern Railway Bridge); thence easterly to River Mile 20.0 on Pasquotank River (Norfolk Southern Railway Bridge); and thence northerly to the North Carolina/Virginia state line near Moyock, North Carolina.
- *Coastal Counties* - Beaufort, Bertie, Brunswick, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Hertford, Hyde, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington (15A NCAC 2H.1002).
- *Collection System* - a public or private sewer system, consisting of sewer lines, force mains, pump stations or any combination thereof that conveys wastewater to a designated wastewater treatment facility or separately-owned sewer system. For purposes of permitting, the collection system is considered to be any existing or newly installed system extension up to the wastewater treatment facility property or point of connection with a separately-owned sewer system (15A NCAC 2T.0402) [Revised March 2007].
- *Commission* - the Environmental Management Commission of the North Carolina Department of Environment, Health, and Natural Resources or its successor (15A NCAC 2B.0403).
- *Compliance Boundary* - a boundary around a disposal system at and beyond which groundwater quality standards may not be exceeded and only applies to facilities which have received a permit issued under the authority of General Statutes (GS) 143-215.1 or GS 130A (15A NCAC 2L.0102).
- *Conjunctive System* - a system where the reclaimed water option is not necessary to meet the wastewater disposal needs of the facility and where other wastewater utilization or disposal methods (e.g., NPDES permit) are available to the facility at all times (15A NCAC 2T.0902) [Added March 2007].
- *Control Authority* - refers to either (15A NCAC 2H.0903):
 1. the POTW if the POTW's submission for its pretreatment program has been approved and that approval has not been subsequently withdrawn
 2. the approval authority if the submission has not been approved or the Division has subsequently withdrawn pretreatment program approval.

- *Corrective Action Plan* - a plan for eliminating sources of groundwater contamination or for achieving groundwater quality restoration or both (15A NCAC 2L.0102).
- *Cover* - soil or other material used to cover residuals placed in a surface disposal unit (15A NCAC 2T.1102) [Added March 2007].
- *Cumulative Pollutant Loading Rate* - the maximum amount of a pollutant that can be applied to a unit area of land. (15A NCAC 2T.1102) [Added March 2007].
- *Curb Outlet System* - curb and gutter installed in a development which meets low density criteria [Rule .1003(c)(1) of 15A NCAC 2H] with breaks in the curb or other outlets used to convey stormwater runoff to grassed swales or vegetated or natural areas and designed in accordance with Rule .1008(g) of 15A NCAC 2H (15A NCAC 2H.1002).
- *Dedicated Land Application Site* - land (15A NCAC 2T.1102) [Added March 2007]:
 - a. to which bulk residuals are applied at greater than agronomic rates,
 - b. to which bulk residuals are applied through fixed irrigation facilities or irrigation facilities fed through a fixed supply system, or
 - c. where the primary use of the land is for the disposal of bulk residuals, and agricultural crop production is of secondary importance.
- *Dedicated Program* - a program involving the application of bulk residuals in which any of the permitted land meets the definition of a dedicated land application site (15A NCAC 2T.1102) [Added March 2007].
- *Deemed Permitted* - that a facility is considered as having a needed permit and being compliant with the permitting requirements of General Statutes (GS) 143-215.1(a) even though it has not received an individual permit for its construction or operation (15A NCAC 2T.0103) [Citation Revised March 2007].
- *Density of Microorganisms* - the number of microorganisms per unit mass of total solids (i.e., dry weight basis) in the residuals (15A NCAC 2T.1102) [Added March 2007].
- *Development* - any land disturbing activity which increases the amount of built-upon area or which otherwise decreases the infiltration of precipitation into the soil (15A NCAC 2H.1002).
- *Director* - the Director of the Division of Environmental Management, Department of Natural Resources and Community Development (15A NCAC 2B.0403).
- *Division* - the Division of Water Quality in the Department. All rules cited in this Section under the authority of the Division may be obtained at 512 North Salisbury Street, Raleigh, North Carolina 27604 or at the Division's web page at www.ncwaterquality.org at no charge. (15A NCAC 2T.0103) [Added March 2007].
- *Division* - the Division of Waste Management in the Department. All rules cited in this Section, under the authority of the Division, may be obtained at 401 Oberlin Road, Raleigh, North Carolina 27604, or at the Division's web page at www.wastenotnc.org (15A NCAC 13B.0831) [Added March 2010].
- *Drainage Area* or *Watershed* - the entire area contributing surface runoff to a single point (15A NCAC 2H.1002).
- *Dry Weight Basis* - the weight calculated after the residuals have been dried at 105 degrees Celsius until they reach a constant mass (15A NCAC 2T.1102) [Added March 2007].
- *Dwelling Unit* - any room or group of rooms located within a structure and forming a single, habitable unit with facilities which are used or intended to be used for living, sleeping, bathing, toilet usage, cooking, and eating (15A NCAC 18A.1935) [Added March 2004].

- *Effluent* - wastewater discharged following all treatment processes from a water pollution control facility or other point source whether treated or untreated (15A NCAC 2T.0103) [Revised March 2007].
- *Engineer* - an individual who is currently licensed by the North Carolina Board of Examiners For Engineers and Land Surveyors or authorized to practice under G.S. 89C as an engineer (15A NCAC 2T.0103) [Added March 2007]
- *Essential Treatment Unit* - any unit associated with the wastewater treatment process whose loss would likely render the facility incapable of meeting the required performance criteria including aeration units or other main treatment units, clarification equipment, filters, disinfection equipment, pumps and blowers (15A NCAC 2T.0103) [Added March 2007]
- *Expanded Animal Waste Management System* - animal waste treatment and storage facilities which require an increase over the existing animal waste design treatment and storage capacity due to an increase in animal population at the feedlot (15A NCAC 2T.1302) [Citation Revised March 2007].
- *Fast-Track* - a permitting process whereby a professional engineer certifies a sewer design and associated construction documents conform to all applicable sewer related rules and design criteria, thereby forgoing an upfront technical review by the Division (15A NCAC 2T.0302) [Added March 2007].
- *Feed Crop* - a crop produced for consumption by animals (15A NCAC 2T.1102) [Added March 2007].
- *Fiber Crop* - a crop grown for fiber production. This shall include flax and cotton (15A NCAC 2T.1102) [Added March 2007].
- *Food Crop* - a crop produced for consumption by humans. This shall include fruits, vegetables, and tobacco (15A NCAC 2T.1102) [Added March 2007].
- *Forebay* - a device located at the head of a wet detention pond to capture incoming sediment before it reaches the main portion of the pond. The forebay is typically an excavated settling basin or a section separated by a low weir (15A NCAC 2H.1002).
- *Fundamentally Different Factors* - factors upon which a variance from a National Categorical Pretreatment Standard may be granted. These factors are those relating to an industrial user that are fundamentally different from the factors considered during development of a National Categorical Pretreatment Standard applicable to that user and that may justify a different discharge limit than specified in the applicable National Categorical Pretreatment Standard (15A NCAC 2H.0903).
- *Grit* - sand, gravel, cinders, or other materials with a high specific gravity generated during preliminary treatment of wastewater in a wastewater treatment facility (15A NCAC 2T.1102) [Added March 2007].
- *Ground Absorption Sewage Treatment and Disposal System* - a system that utilizes the soil for the subsurface disposal of partially treated or treated sewage effluent (15A NCAC 18A.1935).
- *Groundwater Standards* - groundwater standards as established in 15A NCAC 02L .0200 (15A NCAC 2T.0103) [Added March 2007].
- *Groundwaters* - those waters occurring in the subsurface under saturated conditions (see Appendix 12-1 for groundwater classifications) (15A NCAC 2L.0102).
- *Hazardous Substance* - any substance as defined by Section 101(14) of the *Comprehensive Environmental Response, Compensation and Liability Act* of 1980 (CERCLA) (15A NCAC 2L.0102).
- *High-Rate Infiltration* - (15A NCAC 2T.0702) [Added March 2007].

1. In coastal areas as defined in Section 15A NCAC 02H .0400, an application rate that exceeds 1.75 inches of wastewater effluent per week (0.156 gallons per day per square foot of land).
 2. In non-coastal areas, an application rate that exceeds 1.50 gallons of wastewater effluent per day per square foot of land (16.8 inches per week).
- *Incorporation* - the mixing of residuals with top soil to a minimum depth of four inches by methods such as discing, plowing, and rototilling (15A NCAC 2T.1102) [Added March 2007].
 - *Industrial Waste Survey* - to the periodic survey of the users of the POTW performed by the POTW to determine those users meeting the criteria for Significant Industrial User status (15A NCAC 2H.0903).
 - *Industrial Wastewater* - all wastewater other than sewage or animal waste and includes (15A NCAC 2T.0103) [Added March 2007]:
 - a. wastewater resulting from any process of industry or manufacture, or from the development of any natural resource;
 - b. wastewater resulting from processes of trade or business, including wastewater from laundromats and vehicle/equipment washes, but not wastewater from restaurants;
 - c. stormwater that is contaminated with an industrial wastewater;
 - d. any combination of sewage and industrial wastewater;
 - e. municipal wastewater unless it can be demonstrated to the satisfaction of the Division that the wastewater contains no industrial wastewater;
 - f. contaminated groundwater extracted as part of an approved groundwater remediation system approved by the Division in accordance with 15A NCAC 02L .0100.
 - *Infiltration Gallery* - a subsurface ground absorption system expressly designed for the introduction of wastewater into the subsurface environment.
 - *Infiltration Systems* - a stormwater control systems designed to allow runoff to pass or move (infiltrate/exfiltrate) into the soil (15A NCAC 2H.1002).
 - *Injection* - the subsurface application of liquid residuals to a depth of four to 12 inches (15A NCAC 2T.1102) [Added March 2007].
 - *Land Application* - the spraying or spreading of residuals onto the land surface; the injection of residuals below the land surface; or the incorporation of residuals into the soil so that the residuals can condition the soil or fertilize crops or vegetation grown in the soil (15A NCAC 2T.1102 and 15A NCAC 13B.0831) [Added March 2007; Citation Revised March 2010].
 - *Licensed Geologist* - a person who has been duly licensed as a geologist in accordance with the requirements of GS 89E (15A NCAC 2L.0102 and 15A NCAC 13B.0831) [Citation Revised March 2010].
 - *Local Health Department* - any county, district, or other health department authorized to be organized under the General Statutes of North Carolina (15A NCAC 18A.1935).
 - *Lower Explosive Limit For Methane Gas* - the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure (15A NCAC 2T.1102) [Added March 2007].
 - *Manure Hauler* - any person who accepts or purchases animal waste and land applies the animal waste on land not covered by the generator's permit (15A NCAC 2T.1402) [Added March 2007].
 - *Mean High Water Mark* - for coastal waters having 6 in. or more lunar tidal influence, the average height of the high water over a 19-yr period as may be ascertained from National Ocean Survey or U.S. Army Corps of Engineers tide stations data or as otherwise determined under the provisions of the Coastal Area Management Act (15A NCAC 18A.1935).

- *Monthly Average* - the arithmetic mean of all measurements taken during the month (15A NCAC 2T.1102) [Added March 2007].
- *National Categorical Pretreatment Standard* or *Categorical Standard* - to any regulation containing pollutant discharge limits promulgated by USEPA in accordance with sections 307(b) and (c) of the Federal *Clean Water Act* which applies to a specific category of industrial users, and which appears in 40 CFR Chapter 1, Subchapter N, Parts 405 - 471 (15A NCAC 2H.0903).
- *National Pollutant Discharge Elimination System (NPDES) Permit* - required for the operation of point source discharges in accordance with the requirements of Section 402 of the Federal *Water Pollution Control Act*, 33 United States Code (USC) Section 1251 et seq (15A NCAC 2H.0103).
- *National Prohibited Discharge Standard* - an absolute prohibition against the discharge of certain substances to the POTW, including both general and specific prohibitions (15A NCAC 2H.0903).
- *New* - with respect to implementing the NPDES permitting program, means (15A NCAC 2H.0103):
 1. proposed facilities that do not have a NPDES permit nor have any facilities constructed
 2. facilities that physically exist, however are illegally constructed, i.e., no required agency approvals
 3. facilities that have received an NPDES Permit and have received an authorization to construct but have not begun significant construction of any wastewater treatment facilities within the term of the current permit
 4. any increases in treatment plant hydraulic capacity, which has not received an authorization to construct will be considered new and new effluent limitations and other requirements, if applicable, would be imposed for the entire facility
 5. for the purpose of this definition, significant construction will be considered as more than a token or nominal investment of money or other resources in the actual construction of the wastewater treatment facility, based on the facility size, complexity, cost, and the required construction time for completion.
- *New Animal Waste Management System* - animal waste management systems which are constructed and operated at a site where no feedlot existed previously or where a system serving a feedlot has been abandoned or unused for a period of four years or more and is then put back into service. (15A NCAC 2T.1302) [Added March 2007].
- *New Source* - refers to (15A NCAC 2H.0903):
 1. any building, structure, facility, or installation from which there may be a discharge of pollutants, the construction of which commenced after the publication of proposed categorical pretreatment standards under section 307(c) of the Federal *Clean Water Act* which will be applicable to such source if such standards are thereafter promulgated in accordance with section 307(c), provided that one of the following conditions is met:
 - a. the building, structure, facility, or installation is constructed at a site at which no other source is located
 - b. the building, structure, facility, or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source
 - c. the production or wastewater generating processes of the building, structure, facility, or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source, are considered
 2. construction on a site at which an existing source is located results in a modification rather than a new source if the construction does not create a new building, structure, facility, or installation meeting the criteria of Subparts (19)(A)(ii) or (iii) of 15A NCAC 2H.0903 but otherwise alters, replaces, or adds to existing process or production equipment.
 3. for purposes of this definition, construction of a new source has commenced if the owner or operator has either:

- a. begun, or caused to begin, as part of a continuous onsite construction program either of the following:
 - i. any placement, assembly, or installation of facilities or equipment
 - ii. significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment
 - b. entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this definition.
- *Nitrification Field* - the area in which the nitrification lines are located (15A NCAC 18A.1935).
- *Nitrification Lines* - approved pipe, specially designed porous blocks, or other approved materials which receive partially treated sewage effluent for distribution and absorption into the soil beneath the ground surface (15A NCAC 18A.1935).
- *Nondischarge Permit* - a permit issued by the state pursuant to G.S. 143 215.1(d) for a waste which is not discharged directly to surface waters of the state or for a wastewater treatment works which does not discharge directly to surface waters of the state (15A NCAC 2H.0903).
- *Nonground Absorption Sewage Treatment System* - a system for waste treatment designed not to discharge to the soil, land surface, or surface waters, including approved vault privies, incinerating toilets, mechanical toilets, composting toilets, chemical toilets, and recycling systems (15A NCAC 18A.1935) [Revised March 2007].
- *NRCS* - the U.S. Department of Agriculture - Natural Resources Conservation Service (15A NCAC 2T.1302) [Added March 2007].
- *Nutrient Management Plan* - a plan to define the management requirements and nutrient needs of crops to be grown on a septage land application site, including the amount, sources, placement and timing of nutrient applications to maximize the nutrient uptake of the crop. Plan implementation shall protect the environment and maintain crop productivity (15A NCAC 13B.0831) [Added March 2010].
- *Offsite Stormwater Systems* - stormwater management systems that are located outside the boundaries of the specific project in question, but designed to control stormwater drainage from that project and other potential development sites. These systems shall designate responsible parties for operation and maintenance and may be owned and operated as a duly licensed utility or by a local government (15A NCAC 2H.1002).
- *Onsite Stormwater Systems* - the systems necessary to control stormwater within an individual development project and located within the project boundaries (15A NCAC 2H.1002).
- *Pathogens* - disease-causing organisms including disease-causing bacteria, protozoa, viruses, and viable helminth ova (15A NCAC 2T.1102) [Added March 2007].
- *Person* - any individual, firm, association, organization, partnership, business trust, corporation, company, or unit of local government (15A NCAC 18A.1935).
- *Person Who Prepares Residuals* - either the person who generates residuals during the treatment of waste in a wastewater treatment facility or the person who derives a material from residuals (15A NCAC 2T.1102) [Added March 2007].
- *Place of Business* - any store, warehouse, manufacturing establishment, place of amusement or recreation, service station, foodhandling establishment, or any other place where people work or are served (15A NCAC 18A.1935 and 15A NCAC 13B.0831) [Added March 2004; Citation Revised March 2010].

- *Place of Public Assembly* - any fairground, auditorium, stadium, church, campground, theater, school, or any other place where people gather or congregate (15A NCAC 18A.1935 and 15A NCAC 13B.0831) [Added March 2004; Citation Revised March 2010].
- *Place Residuals* - to dispose of residuals in a surface disposal unit (15A NCAC 2T.1102) [Added March 2007].
- *Point Source Discharge* - any discernible, confined, and discrete conveyance, including, but specifically not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or concentrated animal-feeding operation from which wastes are or may be discharged to the surface waters of the State (15A NCAC 2H.0103).
- *Pollutant* - includes any waste defined in GS 143- 213(18); dredged spoil; solid waste; incinerator residue; garbage; sewage sludge; munitions; medical wastes; chemical waste; biological materials; radioactive materials; heat; wrecked or discarded equipment; rock; sand; cellar dirt; municipal and agricultural waste; and certain characteristics of wastewater, such as pH, temperature, TSS, turbidity, color, BOD, COD, toxicity, and odor (15A NCAC 2H.0903).
- *Pollutant Limit* - a numerical value that describes the amount of a pollutant allowed per unit amount of residuals or the amount of a pollutant that can be applied to a unit area of land (15A NCAC 2T.1102) [Added March 2007].
- *Potable Waters* - those waters suitable for drinking by humans (15A NCAC 2L.0102).
- *POTW or Publicly Owned Treatment Works* - a treatment works as defined by Section 212 of the Federal *Clean Water Act (CWA)*, which is owned by a state or local government entity. This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW treatment plant. The term also means the local government entity, or municipality, as defined in section 502(4) of the *CWA*, which has jurisdiction over indirect discharges to and the discharges from such a treatment works (15A NCAC 2H.0903).
- *Pressure Sewer System* - an interdependent system of grinder pump stations, typically for residences, serving individual wastewater connections for single buildings that share a common and typically a small diameter pressure pipe (1.5 inches through 6 inches). Duplex or greater pump stations connected to a common pressure pipe that can operate both independently and simultaneously with other pump stations while maintaining operation of the system within the operating constraints are not considered a pressure sewer system (15A NCAC 2T.0302) [Added March 2007].
- *Pretreatment* - to the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration can be obtained by physical, chemical, or biological processes, or process changes or other means, except as prohibited by 40 CFR Section 403.6(d) (15A NCAC 2H.0903).
- *Pretreatment Standard* - any regulation containing pollutant discharge limits for indirect dischargers for ensuring compliance with Section 307(b) and (c) of the *Clean Water Act*, 33 USC Section 1251 et seq. This term includes prohibited discharge limits and local sewer use ordinance limits (15A NCAC 2H.0103).
- *Private Sewer* - any part of a sewer system which collects wastewater from one building and crosses another property or travels along a street right of way or from more than one building and is not considered a public sewer (15A NCAC 2T.0302) [Revised March 2007].
- *Private Well* - any potable or irrigation well not directly controlled by a public authority or a public utility authorized by the North Carolina Public Utilities Commission. This may include a private individual or

community well as defined in the public water supply rules contained in 15A NCAC 18C. (15A NCAC 2T.0103) [Added March 2007]

- *Privy Building* - includes any and all buildings that are used for privacy in the acts of urination and defecation which are constructed over pit privies and are not connected to a ground absorption sewage treatment and disposal system or a public or community sewage system (15A NCAC 18A.1935).
- *Professional Engineer* - a person who is presently registered and licensed as a professional engineer by the North Carolina State Board of Registration For professional engineers and Land Surveyors (15A NCAC 2H.0103).
- *Public Contact Site* - land with a high potential for contact by the public as defined in 40 CFR 503.11(l). This shall include public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses (15A NCAC 2T.1102) [Added March 2007].
- *Public Management Entity* - a city (GS 160A, Article 16), county (GS 153A, Article 15), interlocal contract (GS 153A, Article 16), joint management agency (GS 160A-461 - 462), county service district (GS 153A, Article 16), county water and sewer district (GS 162A, Article 6), sanitary district (GS 130A, Article 2), water and sewer authority (GS 162A, Article 1), metropolitan water district (GS 162A, Article 4), metropolitan sewerage district (GS 162A, Article 5), public utility [GS 62- 3(23)], county or district health department (GS 130A, Article 2), or other public entity legally authorized to operate and maintain onsite sewage systems (15A NCAC 18A.1935).
- *Public Or Community Sewage System* - a single system of sewage collection, treatment, or disposal owned and operated by a sanitary district, a metropolitan sewage district, a water and sewer authority, a county, a municipality or a public utility authorized to operate by the North Carolina Utilities Commission(15A NCAC 2T.0103) [Added March 2007]
- *Public Sewer* - a sewer located in a dedicated public street, roadway, or dedicated public right-of-way or basement which is owned or operated by any municipality, county, water, or sewer district, or any other political subdivision of the state authorized to construct or operate a sewer system (15A NCAC 2T.0301) [Citation Revised March 2007].
- *Repair Area* - an area, either in its natural state or which is capable of being modified, consistent with the rules in this Section, which is reserved for the installation of additional nitrification fields and is not covered with structures or impervious materials (15A NCAC 18A.1935) [Revised March 2007].
- *Residence* - any home, hotel, motel, summer camp, labor work camp, mobile home, dwelling unit in a multiple-family structure, or any other place where people reside (15A NCAC 18A.1935).
- *Residence* - any habitable home, hotel, motel, summer camp, labor work camp, mobile home, dwelling unit in a multiple-family structure, or any other place where people reside (15A NCAC 13B.0831) [Added March 2010].
- *Residuals* - any solid, semisolid, or liquid waste, other than effluent or residues from agricultural products and processing, generated from a wastewater treatment facility, water supply treatment facility or air pollution control facility permitted under the authority of the Commission. (15A NCAC 2T.0103) [Added March 2007]
- *Residues From Agricultural Products And Processing* - solids, semi-solids or liquid residues from food and beverage processing and handling; silviculture; agriculture; and aquaculture operations permitted under the authority of the Commission that are non-toxic, non-hazardous and contain no domestic wastewater(15A NCAC 2T.0103) [Added March 2007].
- *Restrictive Horiz*o - the layer in a soil profile that is capable of reducing the downward water movement to the minimum rate, as evidenced by lowest saturated hydraulic conductivity among all the soil layers. Restrictive

horizon is often capable of perching ground water or wastewater effluent and is characterized by accumulation of finer soil particles (such as aluminum, clay, iron, silica, organic matter, or other compounds) or compaction due to heavy equipments(15A NCAC 2T.0103) [Added March 2007].

- *Review Boundary* - a boundary around a permitted disposal facility, midway between a waste boundary and a compliance boundary at which groundwater monitoring is required (15A NCAC 2L.0102).
- *Rock* - the body of consolidated or partially consolidated material composed of minerals at or below the land surface. Rock includes bedrock and partially weathered rock that is hard and cannot be dug with hand tools. The upper boundary of rock is saprolite, soil, or the land surface (15A NCAC 18A.1935).
- *Runoff* - rainwater, leachate, or other liquid that drains overland and runs off of the land surface (15A NCAC 2T.1102) [Added March 2007].
- *Sanitary System of Sewage Treatment and Disposal* - a complete system of sewage collection, treatment and disposal, including approved privies, septic tank systems, connection to public or community sewage systems, incinerators, mechanical toilets, composting toilets, recycling toilets, mechanical aeration systems, or other such systems (15A NCAC 18A.1935).
- *Saprolite* - the body of porous material formed in place by weathering of igneous or metamorphic rocks. Saprolite has a massive, rock-controlled structure, and retains the fabric (arrangement of minerals) of its parent rock in at least 50 percent of its volume. Saprolite can be dug with hand tools. The lower limit of saprolite is rock and its upper limit is soil or the land surface. The term saprolite does not include sedimentary parent materials (15A NCAC 18A.1935).
- *Saturated Zone* - that part of the subsurface below the water table in which all the interconnected voids are filled with water under pressure at or greater than atmospheric. It does not include the capillary fringe (15A NCAC 2L.0102).
- *Screenings* - rags or other relatively large materials generated during preliminary treatment of wastewater in a wastewater treatment facility (15A NCAC 2T.1102) [Added March 2007].
- *Seasonal High Water Table* - the highest level that groundwater, at atmospheric pressure, reaches in the soil in most years. The seasonal high water table is usually detected by the mottling of the soil that results from mineral leaching (15A NCAC 2H.1002).
- *Seasonal High Water Table" or "SHWT"* - the highest level to which the soil is saturated, as may be determined through the identification of redoximorphic features in the soil profile including low chroma mottling. This does not include temporary perched conditions. Alternatively, the SHWT can also be determined from water level measurements or via soil/groundwater modeling (15A NCAC 2T.0103) [Added March 2007].
- *Sedimentation/Erosion Control Plan* - any plan, amended plan or revision to an approved plan submitted to the Division of Land Resources or delegated authority in accordance with GS 113A-57 (15A NCAC 2H.1002).
- *Seismic Impact Zone* - an area that has a 10 percent or greater probability that the horizontal ground level acceleration of the rock in the area exceeds 0.10 gravity once in 250 years (15A NCAC 2T.1102) [Added March 2007].
- *Septic Tank* - a water-tight, covered receptacle designed for primary treatment of sewage and constructed to (15A NCAC 18A.1935):
 1. receive the discharge of sewage from a building
 2. separate settleable and floating solids from the liquid
 3. digest organic matter by anaerobic bacterial action
 4. store digested solids through a period of detention
 5. allow clarified liquids to discharge for additional treatment and final disposal.

- *Septic Tank System* –
 1. A ground absorption sewage disposal system consisting of a holding or settling tank and a ground absorption field (15A NCAC 2H.0404).
 2. A subsurface sanitary sewage system consisting of a septic tank and a subsurface disposal field (15A NCAC 18A.1935).
- *Septage* - as defined in G.S. 130A-290 (a) (32) and also shall include washings from the interior of septage handling containers, including pumper trucks (15A NCAC 13B.0831) [Added March 2010].
- *Septage* - solid waste that is a fluid mixture of untreated and partially treated sewage solids, liquids, and sludge of human or domestic origin which is removed from a wastewater system. The term septage includes the following: (N.C.G.S.A. 13A-290) [Added March 2010]
 - a. Domestic septage, which is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works receiving only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works receiving either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.
 - b. Domestic treatment plant septage, which is solid, semisolid, or liquid residue generated during the treatment of domestic sewage in a treatment works where the designed disposal is subsurface. Domestic treatment plant septage includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a material derived from domestic treatment plant septage. Domestic treatment plant septage does not include ash generated during the firing of domestic treatment plant septage in an incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.
 - c. Grease septage, which is material pumped from grease interceptors, separators, traps, or other appurtenances used for the purpose of removing cooking oils, fats, grease, and food debris from the waste flow generated from food handling, preparation, and cleanup.
 - d. Industrial or commercial septage, which is material pumped from septic tanks or other devices used in the collection, pretreatment, or treatment of any water-carried waste resulting from any process of industry, manufacture, trade, or business where the design disposal of the wastewater is subsurface. Domestic septage mixed with any industrial or commercial septage is considered industrial or commercial septage.
 - e. Industrial or commercial treatment plant septage, which is solid, semisolid, or liquid residue generated during the treatment of sewage that contains any waste resulting from any process of industry, manufacture, trade, or business in a treatment works where the designed disposal is subsurface. Industrial or commercial treatment plant septage includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a material derived from domestic treatment plant septage. Industrial or commercial treatment plant septage does not include ash generated during the firing of industrial or commercial treatment plant septage in an incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.
- *Septage Management Facility* - land, personnel, and equipment used in the management of septage, including but not limited to, land application sites (15A NCAC 13B.0831) [Added March 2010].
- *Septic Tank/Effluent Pump (STEP) System* - the same type of system as a "pressure sewer system" except that the individual grinder pump is replaced with a septic tank with an effluent pump either in the second chamber of the septic tank or in a separate pump tank that follows the septic tank (15A NCAC 2T.0302) [Added March 2007].
- *Setback* - the minimum separation in linear feet, measured on a horizontal plane, required between a treatment works, disposal system, or utilization system and physical features such as building, roads, property lines, or water bodies (15A NCAC 2T.0103) [Added March 2007]
- *Settleable Solids* - the volumetric measurement of solids after a specified settling time. The determination of settleable solids is made in the following manner: 1 L of wastewater is placed in a standard Imhoff cone and

allowed to settle for 45 min. After 45 min settling, the liquid layer is gently stirred and allowed to settle for 15 additional minutes. The volume of solids is immediately read in mL/L (15A NCAC 2B.0403).

- *Sewage* - the liquid and solid human waste and liquid waste generated by water-using fixtures and appliances, including those associated with food handling. The term does not include industrial process wastewater or sewage that is combined with industrial process wastewater (15A NCAC 18A.1935) [Added March 2004].
- *Sewage* - the liquid and solid human waste, and liquid waste generated by domestic water-using fixtures and appliances, from any residence, place of business, or place of public assembly. Sewage does not include wastewater that is totally or partially industrial wastewater, or any other wastewater not considered to be domestic waste (15A NCAC 2T.0103) [Citation Revised March 2007].
- *Sewer System* - any part of a sewer system which collects wastewater from one building and crosses another property or travels along a street right of way or from more than one building and is not considered a public sewer (15A NCAC 2T.1302) [Revised March 2007Citation Revised March 2009].
- *Significant Industrial User* or *SIU* - an industrial user that discharges wastewater into a publicly owned treatment works and that either (15A NCAC 2H.0903):
 1. effective 1 January 1996, that discharges an average of 25,000 gal or more per day of process wastewater to the POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewaters)
 2. contributes more than 5 percent of the design flow of the POTW treatment plant or more than 5 percent of the maximum allowable headworks loading of the POTW treatment plant for any pollutant of concern
 3. is required to meet a national categorical pretreatment standard
 4. is, regardless of Parts 1, 2, and 3 of this definition, otherwise determined by the control authority to have a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement or POTW's receiving stream standard, or to limit the POTW's sludge disposal options.
- *Site* - the area in which the sewage treatment and disposal system is to be located and the area required to accommodate repairs and replacement of nitrification field and permit proper functioning of the system (15A NCAC 18A.1935) [Added March 2004].
- *Small Diameter, Variable Grade Gravity Sewer System* - a system of wastewater collection utilizing an interceptor tank to remove solids and grease from the waste stream, thereby allowing smaller diameter pipes and shallower grades to be used. Flow is transferred to the central gravity system in the public right-of-way by gravity or effluent pumps. With venting and design, inflective grades (up-gradients) may also be accommodated (15A NCAC 2T.0302) [Added March 2007].
- *Soil* - the naturally occurring body of porous mineral and organic materials on the land surface. Soil is composed of sand-, silt-, and clay-sized particles that are mixed with varying amounts of larger fragments and some organic material. Soil contains less than 50 percent of its volume as rock, saprolite, or coarse-earth fraction (mineral particles greater than 2.0 mL). The upper limit of the soil is the land surface, and its lower limit is "rock", "saprolite", or other patent materials (15A NCAC 18A.1935).
- *Specific Oxygen Uptake Rate (SOUR)* - the mass of oxygen consumed per unit time per unit mass of total solids (i.e., dry weight basis) in the residuals (15A NCAC 2T.1102) [Added March 2007].
- *Standards* - groundwater quality standards as specified in Rule.0202 of this 15A NCAC 2L (15A NCAC 2L.0102).
- *State* - the Department of Environment and Natural Resources, Division of Environmental Health (15A NCAC 18A.1935).
- *Stormwater Collection System* - any conduit, pipe, channel, curb or gutter for the primary purpose of transporting (not treating) runoff. A stormwater collection system does not include vegetated swales, swales

stabilized with armoring or alternative methods where natural topography or other physical constraints prevents the use of vegetated swales (subject to case-by-case review), curb outlet systems, or pipes used to carry drainage underneath built-upon surfaces that are associated with development controlled by the provisions of Rule.1003(c)(1) in 15A NCAC 2H (15A NCAC 2H.1002).

- *Stream* - a natural or manmade channel, including groundwater lowering ditches and devices, in which water flows or stands most of the year (15A NCAC 18A.1935).
- *Subsurface Disposal* - the application of sewage effluent beneath the surface of the ground by distribution through approved nitrification lines (15A NCAC 18A.1935).
- *Suitable for Drinking* - a quality of water that does not contain substances in concentrations which, either singularly or in combination if ingested into the human body, may cause death, disease, behavioral abnormalities, congenital defects, genetic mutations, or result in an incremental lifetime cancer risk in excess of 1×10^{-6} , or render the water unacceptable due to aesthetic qualities, including taste, odor, or appearance (15A NCAC 2L.0102).
- *Surface Disposal Unit* - the land on which only residuals are placed for final disposal, not including land on which residuals is either treated or stored. This shall include monofills, lagoons, and trenches (15A NCAC 2T.1102) [Added March 2007].
- *Surface Disposal Unit Boundary* - the outermost perimeter of a surface disposal unit (15A NCAC 2T.1102) [Added March 2007].
- *Surface Waters* - all waters of the state as defined in GS 143-212 except underground waters (15A NCAC 2T.0103) [Citation Revised March 2007].
- *Technical Specialist* - an individual designated by the Soil and Water Conservation Commission, pursuant to rules adopted by that Commission, to certify animal waste management plans or specific parts of a certified animal waste management plan. (15A NCAC 2T.0103) [Added March 2007].
- *Ten Year Storm* - the surface runoff resulting from a rainfall of an intensity expected to be equaled or exceeded, on the average, once in 10 yr, and of a duration which will produce the maximum peak rate of runoff, for the watershed of interest under average antecedent wetness conditions (15A NCAC 2H.1002).
- *Total Solids* - the materials that remain as residue after the residuals have been dried at between 103 and 105 degrees Celsius until they reach a constant mass (15A NCAC 2T.1102) [Added March 2007].
- *Toxicity Test* - a test for toxicity conducted using the procedures contained in 40 CFR 261, Appendix II which is hereby incorporated by reference including any subsequent amendments and editions (15A NCAC 2T.0103) [Added March 2007].
- *Treatment of Septage* - the preparation of septage for final use or disposal. Treatment includes, but is not limited to, thickening, stabilization, and dewatering of septage. Treatment does not include storage of septage (15A NCAC 13B.0831) [Added March 2010].
- *Treatment Works Or Disposal System Which Does Not Discharge To Surface Waters* - any treatment works, facility, utilization system, or disposal system which is designed to (15A NCAC 2T.0103) [Added March 2007]:
 1. operate as closed system with no discharge to waters of the state, or
 2. dispose/utilize of wastes, including residuals, residues, contaminated soils and animal waste, to the surface of the land, or
 3. dispose of wastes through a subsurface disposal system pursuant to G.S. 143-215.1(b)(4).
- *Treatment Works or Disposal System Which Does Not Discharge to Surface Waters* - any treatment works, facility, or disposal system that is designed to (15A NCAC 2T.0103) [Citation Revised March 2007]:

1. operate as closed system with no discharge to waters of the state
 2. dispose/utilize of wastes, including residuals, residues, contaminated soils, and animal waste, to the surface of the land
 3. dispose of wastes through a subsurface absorption system.
- **Unstabilized Residuals** - residuals that have not been treated in either an aerobic or an anaerobic treatment process (15A NCAC 2T.1102) [Added March 2007].
 - **Unstable Area** - land subject to natural or human-induced forces that may damage the structural components of a surface disposal unit. This shall include land on which the soils are subject to mass movement (15A NCAC 2T.1102) [Added March 2007].
 - **Vacuum Sewer System** - a mechanized system of wastewater collection utilizing differential air pressure to move the wastewater. Centralized stations provide the vacuum with valve pits providing the collection point from the source and also the inlet air required to move the wastewater. In conjunction with the vacuum pumps, a standard (non vacuum) pump station and force main is used to transport the wastewater from the vacuum tanks to a gravity sewer or ultimate point of treatment and disposal (15A NCAC 2T.0302) [Added March 2007].
 - **Vector Attraction** - the characteristic of residuals that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents (15A NCAC 2T.1102) [Added March 2007].
 - **Vegetative Buffer** - an area of natural or established vegetation directly adjacent to surface waters through which stormwater runoff flows in a diffuse manner to protect surface waters from degradation due to development activities. The width of the buffer is measured horizontally from the normal pool elevation of impounded structures, from the bank of each side of streams or rivers, and from the mean high water line of tidal waters, perpendicular to the shoreline (15A NCAC 2H.1002).
 - **Vegetative Filter** - an area of natural or planted vegetation through which stormwater runoff flows in a diffuse manner so that runoff does not become channelized and which provides for control of stormwater runoff through infiltration of runoff and filtering of pollutants. The defined length of the filter shall be provided for in the direction of stormwater flow (15A NCAC 2H.1002).
 - **Volatile Solids** - the amount of the total solids in the residuals lost when they are combusted at 550 degrees Celsius in the presence of excess air (15A NCAC 2T.1102) [Added March 2007].
 - **Waste Boundary** - the perimeter of the permitted waste disposal area (15A NCAC 2H.1002).
 - **Waste Oil** - any used nonhazardous petroleum product other than crankcase oil. Crankcase oil mixed with other used nonhazardous petroleum products shall be considered as waste oil (15A NCAC 2T.0103) [Added March 2007].
 - **Waste Stabilization Pond (lagoons or oxidation ponds)** - a large, relatively shallow basin designed for long term detention of wastewater that may or may not have received prior treatment. While in the basin, the wastewater is biologically treated to reduce biochemical oxygen demand and suspended solids. Stabilization ponds are further defined as:
 1. **photosynthetic pond** - a pond which is designed to rely on photosynthetic oxygenation (i.e., oxygen from algae) for any portion of the oxygen needed for waste treatment; this includes oxidation ponds and facultative lagoons. These ponds may have supplemental aeration by mechanical means. With regard to hydraulic flow, photosynthetic ponds are either:
 - a. **flow-through type**, in which the pond discharges relatively continuously throughout the year
 - b. **controlled-discharge type**, in which the pond is designed to retain the wastewater without discharge from 6 mo to 1 yr, followed by controlled discharge over a short time interval (typically about 1 to 3 weeks)
 2. **aerated pond** - a pond that is not designed to rely on any photosynthetic oxygenation to provide oxygen needed for biological waste treatment. Air is supplied by mechanical means. Aerated ponds are either:

- a. complete mix, in which sufficient energy is imparted to the wastewater to prevent deposition of solids in the pond
- b. partial-mix, in which only sufficient energy is used to dissolve and mix oxygen in the wastewater. Solid materials settle in the partial-mix pond and are decomposed anaerobically. There will be algae in the partial-mix aerated pond, but usually far fewer than in a photosynthetic pond.

This definition does not include polishing or holding ponds that are preceded by other biochemical or physical/chemical secondary treatment processes and designed to increase their efficiency. The pond may be single-cell or multi-cell (15A NCAC 2B.0403).

- *Wastewater* - the liquid and water-carried industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, mobile sources, treatment facilities and institutions, together with any groundwater, surface water, and stormwater that may be present, whether treated or untreated, which are contributed into or permitted to enter the POTW (15A NCAC 2H.0903).
- *Water Table* - the surface of the saturated zone below which all interconnected voids are filled with water and at which the pressure is atmospheric (15A NCAC 2L.0102).
- *Water Treatment Residuals* - residuals that have been generated during the treatment of potable or process water (15A NCAC 2T.1102) [Added March 2007].
- *Wet Detention Pond* - a structure that provides for the storage and control of runoff and includes a designed and maintained permanent pool volume (15A NCAC 2H.1002).

**WASTEWATER MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	WA.2.1.NC.
Discharges to the Environment	WA.5.1.NC. through WA.5.11.NC.
Permits	WA.10.1.NC. through WA.10.5.NC.
State Permits	WA.15.1.NC. through WA.15.8.NC.
Treatment Works	WA.20.1.NC. through WA.20.11.NC.
Discharges to a POTW/FOTW	
Pretreatment Standards	WA.30.1.NC.
Industrial Users	WA.35.1.NC.
Documentation/Reporting to the POTW	WA.40.1.NC.
Other Discharges and Dischargers	WA.95.1.NC. through WA.95.9.NC.
Sewage Systems	WA.100.1.NC. through WA.100.12.NC.
Land Application of Sludge	
General	WA.105.1.NC. through WA.105.7.NC.
Notifications	WA.115.1.NC.
Monitoring	WA.120.1.NC.
Recordkeeping and Reporting	WA.125.1.NC.
State-Specific Requirements	WA.130.1.NC. through WA.130.6.NC.
Disposal of Sludge	WA.145.1.NC. through WA.145.9.NC.
Other Sewage/Sludge Management	WA.148.1.NC. through WA.148.6.NC.
Watershed Protection Programs	WA.150.1.NC. through WA.150.4.NC.
Wastewater Reuse	WA.155.1.NC. through WA.155.27.NC.

GUIDANCE FOR APPENDIX USERS

REFER TO APPENDIX NUMBERS:

REFER TO APPENDIX TITLES:

12-1	Groundwater Classifications
12-2	Surface Water Classifications
12-3	[Deleted]
12-4	Minimum Treatment Works and Disposal System Buffer Zone Requirements
12-5	Effluent Limitations for Wastewater Treatment Facilities
12-6	Effluent Limitations for Waste Stabilization Ponds
12-7	Scale for Rating Wastewater Treatment Facilities
12-8	Location Distances for Individual Sewage Systems
12-9	Discharges Exempt from NPDES
12-10	Groundwater Quality Standards for Class GA and GSA Groundwaters
12-11	Pollutant Limits for Residuals Management
12-12	Pathogen Reduction Requirements
12-13	Vector Attraction Reduction Alternatives
12-14	Minimum Separations For Sewer Systems

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WA.2.</p> <p>MISSING CHECKLIST ITEMS</p> <p>WA.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WA.5.4.NC. Infiltration systems for stormwater management must meet specific engineering design requirements (15A NCAC 2H.1008 (d)).</p>	<p>(NOTE: Infiltration systems may be designed to provide infiltration of the entire design. Infiltration may also be used to pretreat runoff prior to disposal in wet detention ponds.)</p> <p>Verify that infiltration systems meet the following general requirements:</p> <ul style="list-style-type: none"> - are a minimum of 30 ft from surface waters and 50 ft from Class SA waters - are a minimum distance of 100 ft from water supply wells - the bottoms of the systems are a minimum of 2 ft above the seasonal high water table - designed so that runoff in excess of the design volume by-passes the system and does not flush pollutants through the system - designed to completely draw down the design storage volume to the seasonal high water table under seasonal high water conditions within 5 days - soils have a minimum hydraulic conductivity of 0.52 in./h - are not sited on, or in, fill material, unless approved on a case-by-case basis - if runoff is directed to infiltration systems during construction of the project, the system is restored to design specifications after the project is complete and the entire drainage area is stabilized.
<p>WA.5.5.NC. Wet detention ponds for stormwater management must meet specific engineering design requirements (15A NCAC 2H.1008 (e)).</p>	<p>(NOTE: Wet detention ponds are designed for a specific pollutant removal.)</p> <p>Verify that the wet detention ponds are designed to meet the following requirements:</p> <ul style="list-style-type: none"> - design storage volume is above the permanent pool - the discharge rate from these systems following the 1 in. rainfall design storm are such that draw down to the permanent pool level occurs within 5 days, but not in less than 2 days - permanent pool level mean depth is minimally 3 ft and is designed with sufficient surface area to remove 85 percent of total suspended solids; the design is based on "Methodology for Analysis of Detention Basins for Control of Urban Runoff Quality" - the inlet structure is designed to minimize turbulence using baffles or other appropriate design features and is located to avoid short circuiting in the pond - basin side slopes for storage volume above the permanent pool is stabilized with vegetation down to the permanent pool level which is no steeper than 3:1 (horizontal to vertical) - a forebay to enhance sedimentation at the inlet to the pond - side slopes of the pond no steeper than 3:1 (horizontal to vertical) - a vegetative shelf around the perimeter of the basin; the shelf is gently sloped (6:1 or flatter) and consists of native vegetation - account for sufficient sediment storage to allow proper operation of the facility between scheduled cleanout periods.

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WA.5.6.NC. Vegetative filters for stormwater management must meet specific engineering design requirements (15A NCAC 2H.1008(f)).</p>	<p>(NOTE: Pretreatment of runoff using vegetative filters may be used to minimize sedimentation and eutrophication of the detention pond.)</p> <p>(NOTE: Vegetative filters may be used as a nonstructural method for providing additional infiltration, filtering of pollutants, and minimizing stormwater impacts.)</p> <p>Verify that these filters meet the following requirements:</p> <ul style="list-style-type: none"> - a distribution device such as a swale is used to provide even distribution of runoff across the width of the vegetative filter - the slope and length of the filter is designed, constructed, and maintained so as to provide a nonerosive velocity of flow through the filter for the 10 yr storm and have a slope of 5 percent or less, where practicable - vegetation in the filter may be natural vegetation, grasses, or artificially planted wetland vegetation appropriate for the site characteristics.
<p>WA.5.7.NC. Curb outlet systems for stormwater management must meet specific engineering design requirements (15A NCAC 2H.1008(g)).</p>	<p>(NOTE: Projects that meet low density provisions may use curb and gutter with outlets to convey stormwater to grassed swales or vegetated areas prior to the runoff discharging to vegetative filters or wetlands.)</p> <p>Verify that these curb outlet systems meet the following requirements:</p> <ul style="list-style-type: none"> - the curb outlets are located so that the swale or vegetated area can carry peak flow from the 10-yr storm and the velocity of the flow is nonerosive - the longitudinal slope of the swale or vegetated area does not exceed 5 percent, where practicable - side slopes of the swale or vegetated area are no steeper than 5:1 (horizontal to vertical); where this is not practical due to physical constraints, devices to slow the rate of runoff and encourage infiltration to reduce pollutant delivery are provided - the minimum length of the swale or vegetated area is 100 ft - in sensitive areas, practices such as check dams, rock or wooden, may be required to increase detention time within the swale or vegetated area.
<p>WA.5.8.NC. Development activities must have an operation and maintenance plan or manual for stormwater systems (15A NCAC 2H.1008(i)).</p>	<p>Verify that the developer has an operation and maintenance plan or manual.</p> <p>Verify that the plan or manual has the following information:</p> <ul style="list-style-type: none"> - operation and maintenance actions - specific quantitative criteria used for determining when operation and maintenance actions will be taken - who is responsible for operation and maintenance actions - steps to take and who is responsible for restoring a stormwater system to

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WA.5.9.NC. Discharges of a waste, hazardous substance, or oil to groundwaters of the State require specific action and reporting (15A NCAC 2L.0106(b) through (d), and (h), 2L.0111 and 2L.0114(a)) [Revised March 2004; Revised March 2008].</p>	<p>design specifications if a failure occurs - an acknowledgment by the responsible party.</p> <p>Verify that development is maintained consistent with the requirements in these plans and the original plans and the Division approves any modifications.</p> <p>Verify that stormwater systems are designed by an individual who meets any North Carolina occupational licensing requirements for the type of system proposed.</p> <p>Verify that, upon completion of construction, the system designer certifies that the system was inspected during construction, was constructed in substantial conformity with plans and specifications approved by the Division, and complies with these requirements.</p> <p>Verify that, for any discharge of a waste, hazardous substance, or oil to groundwaters of the state, or in proximity thereto, immediate action is taken to terminate, control and mitigate any hazards resulting from exposure to the pollutants.</p> <p>Verify that, for any unpermitted discharge of a waste, hazardous substance, or oil to groundwaters of the state, or in proximity thereto, the Division is notified immediately.</p> <p>Verify that where an activity results in an increase in the concentration of a substance in excess of the standard, other than agricultural operations, the following steps are taken:</p> <ul style="list-style-type: none"> - immediate notification of the activity to the Division - immediate action to eliminate the source or sources of contamination - submission of a report to the Director assessing the cause, significance, and extent of the violation - implementation of an approved corrective action plan for restoration of groundwater quality in accordance with a schedule established by the Director. <p>(NOTE: Groundwater quality standards are listed in Appendix 12-10.)</p> <p>Verify that any person conducting or controlling an activity which is conducted under the authority of a permit issued by the Division and which results in an increase in concentration of a substance in excess of the standards at or beyond a review boundary does one of the following:</p> <ul style="list-style-type: none"> - demonstrate, through predictive calculations or modeling, that natural site conditions, facility design, and operational controls will prevent a violation of standards at the compliance boundary - submit a plan for altering existing site conditions, facility design, or operational controls to prevent a violation at the compliance boundary, and

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	<p>implementation of that plan upon its approval by the Director.</p> <p>Verify that any person conducting or controlling an activity which is conducted under the authority of a permit issued by the Division and which results in an increase in concentration of a substance in excess of the standards at or beyond a compliance boundary develops the following:</p> <ul style="list-style-type: none"> - an assessment of the cause, significance, and extent of the violation and submission of the results of the investigation - a plan and proposed schedule for corrective action, to the Director. <p>Verify that the permittee implements the plan as approved by, and in accordance with a schedule established by, the Director or his designee.</p> <p>Verify that corrective action plans for restoration of groundwater quality include the following:</p> <ul style="list-style-type: none"> - description of the proposed corrective action and reasons for its selection - specific plans, including engineering details where applicable, for restoring groundwater quality - schedule for implementation and operation of the proposed plan - monitoring plan for evaluating the effectiveness of the proposed corrective action and the movement of the contaminant plume. <p>Verify that a written report is submitted to the director describing the following:</p> <ul style="list-style-type: none"> - results of the investigation, including a description of sampling procedures followed and methods of chemical analyses used and all technical data used in support of any conclusions drawn or determinations made - results of predictive calculations or modeling, including a copy of the calculations or model runs and all supporting technical data - proposed methodology and timetable associated with the corrective action. <p>Verify that the report is prepared under the responsible charge of a professional engineer or licensed geologist and bears the seal of the same.</p> <p>Verify that a report is made to the local health director and the chief administrative officer of the political jurisdictions in which the groundwater contamination has occurred describing the following:</p> <ul style="list-style-type: none"> - area extent of the contaminant plume - chemical constituents in the groundwater which exceed the standards (see Appendix 12-10) - actions taken and intended to mitigate threats to human health - location of any wells installed to monitor the contaminant plume - frequency of sampling. <p>Verify that the report is submitted no later than 5 working days after submittal of the completed report assessing the cause, significance, and extent of the violation.</p>

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<p>WA.5.10.NC. [Moved March 2006].</p> <p>WA.5.11.NC. Waste dischargers from groundwater monitoring systems must meet specific requirements (15A NCAC 2L.0110) [Revised March 2006; Revised March 2008].</p>	<p>(NOTE: Moved to WA.100.12.NC., March 2006.)</p> <p>Verify that, except where exempted by statute, any person who causes, permits or has control over any discharge of waste, or groundwater cleanup program, installs and implements a monitoring system.</p> <p>Verify that a monitoring system is installed and implemented at such locations, and in such detail, as the Director or his designee may require to evaluate the effects of the discharge upon the waters of the state, including the effect of any actions taken to restore groundwater quality, as well as the efficiency of any treatment facility.</p> <p>Verify that the monitoring plan is prepared under the responsible charge of a professional engineer or licensed geologist and bears the seal of the same.</p> <p>Verify that monitoring systems are constructed in a manner that will not result in contamination of adjacent groundwaters of a higher quality.</p> <p>Verify that monitoring is conducted and results reported in a manner and at a frequency specified by the Director, or his designee.</p>

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<p>WA.10.</p> <p>PERMITS</p> <p>WA.10.1.NC. Treatment or pretreatment works, and any discharger of wastes or stormwater to surface waters must have a North Carolina NPDES permit to discharge wastewater to the environment (15A NCAC 2H.0100, 2H.0102, and 2H.0106) [Revised March 2003].</p> <p>WA.10.2.NC. Permitted waste or stormwater discharges must meet specific reliability requirements (15A NCAC 2H.0124).</p>	<p>Verify that the waste or stormwater discharger has an NC NPDES permit for the following activities:</p> <ul style="list-style-type: none"> - discharging or proposing to discharge waste to surface waters of the state from an outlet, point source, or disposal system - construction of, or proposing to construct, a treatment or pretreatment works with such a discharge - operating, or proposing to operate, a treatment works with such a discharge - discharging, or proposing to discharge, stormwater that results in water pollution. <p>(NOTE: Facilities which have a permit from a local pretreatment control authority authorized to issue such permits, and whose pretreatment program was approved, are exempt from this requirement. See Appendix 12-9 for a listings of discharges that do not need permits.)</p> <p>Verify that the waste or stormwater discharger meets the requirements of the NPDES permit.</p> <p>Verify that all waste and stormwater dischargers provide adequate reliability measures, which, in the opinion of the Director, will ensure continued treatment and disinfection when interruption of treatment would render the waters unsafe for their best intended uses.</p> <p>Verify that the reliability measures for new or hydraulically expanding facilities with mechanically operated components include multiple (dual at a minimum) components such as pumps, chemical feed systems, aeration equipment, and disinfection equipment.</p> <p>Verify that a waste or stormwater discharger has at least one of the following:</p> <ul style="list-style-type: none"> - an onsite standby power supply - approval by the Director that the facility either: <ul style="list-style-type: none"> - serves a private water distribution system which has automatic shut-off at power failure and no elevated water storage tanks, and has sufficient storage capacity that no potential for overflow exists - can tolerate septic wastewater due to prolonged detention, and would have de minimus impacts as a result of power failure - a demonstration that waters that would be impacted by a power failure are classified as C Waters.

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	<p>(NOTE: The applicant may be allowed to show a history of power reliability that would demonstrate that an alternative power source would not be needed or that other measures which provide comparable assurances that surface waters will not be impacted during power failures).</p> <p>Verify that, for new or hydraulically expanding mechanical facilities, the treatment plant contains parallel units for components in the liquid line (screening, primary sedimentation, biological treatment units, chemical and physical treatment units, clarifiers, disinfection and effluent filters), unless the applicant can demonstrate to the satisfaction of the Director that this requirement is unwarranted for a particular case.</p> <p>Verify that, for mechanical facilities with a design capacity equal to or greater than 5.0 mgd, continuous operation, 24 h, 7 days per week, with each shift staffed by at least one certified wastewater operator is provided unless the applicant can demonstrate to the satisfaction of the Director that this requirement is unwarranted.</p> <p>Verify that, for permitted facilities, the permittee designates an Operator in Responsible Charge and a back-up operator as required by the Water Pollution Control System Operators Certification Commission.</p> <p>Verify that, in order to ensure proper operation and maintenance of permitted facilities, the operator in responsible charge, or back-up operator when appropriate, operates and visits the facility as required by the Water Pollution Control System Operators Certification Commission.</p> <p>Verify that there is compliance with other reliability measures that, in the opinion of the Director, are necessary in a particular case.</p>
<p>WA.10.3.NC. Permitted waste and stormwater discharges must meet minimum design requirements (15A NCAC 2H.0139).</p>	<p>Verify that waste and stormwater discharging facilities requiring a permit are designed following good engineering practice and comply with minimum design requirements.</p> <p>Verify that plans and specifications are stamped and sealed by a professional engineer licensed in North Carolina, unless all 3 of the following conditions are met:</p> <ul style="list-style-type: none"> - plans and specifications are for domestic waste from a single family dwelling with flows of 1000 gpd or less - plans and specifications are prepared by the homeowner, and contain complete information needed to evaluate the proposed facility - the effluent limitations are for secondary treatment.
<p>WA.10.4.NC. A stormwater management permit is</p>	<p>(NOTE: This checklist item moved here from WA.5.2.NC.; February 1999.)</p>

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<p>required for development in certain specified areas (15A NCAC 2H.1003 (b) and NCGSA 113A-57) [Revised March 2008].</p> <p>WA.10.5.NC. Individual and group dischargers in the Neuse River Basin must comply with wastewater NPDES discharge requirements (15A NCAC 2B.0234) [Added March 2004].</p>	<p>Verify that a stormwater management permit is acquired for any development activities which require a CAMA major development permit or a Sedimentation/Erosion Control Plan and:</p> <ul style="list-style-type: none"> - are located in a coastal county - drain to Outstanding Resource Waters (ORW) - are located within one mile of and draining to High Quality Waters (HQW). <p>(NOTE: An erosion and sedimentation control plan is required for any land-disturbing activity that will disturb more than one acre on a tract.)</p> <p>(NOTE: See Appendix 12-2 for description of ORW and HQW waters.)</p> <p>(NOTE: The purpose of this Rule is to establish minimum nutrient control requirements for point source discharges in the Neuse River Basin in order to maintain or restore the water quality in the Neuse River Estuary and protect its designated uses. It applies to all wastewater treatment facilities in the Neuse River Basin that receive nitrogen-bearing wastewater and are required to obtain individual NPDES permits. Each individual discharger will be assigned an individual discharge allocation and the equivalent estuary allocation.)</p> <p>Verify that, beginning with calendar year 2003, each discharger with a permitted flow equal to or greater than 0.5 million gallons per day (MGD) complies with a total nitrogen permit limit equal to its individual discharge allocation.</p> <p>Verify that all existing facilities above Falls Lake Dam with permitted flows greater than or equal to 0.05 MGD meet a quarterly average total phosphorus limit of 2 mg/L.</p> <p>Verify that all existing facilities below Falls Lake Dam with permitted flows greater than or equal to 0.5 MGD meet a quarterly average total phosphorus limit of 2 mg/L.</p> <p>(NOTE: The Director will establish more stringent limits for nitrogen or phosphorus upon finding that that limits are necessary to protect water quality standards in localized areas. New and expanded facilities must meet the limits of their permits.)</p> <p>(NOTE: Association members will be exempted from the permit limits for total nitrogen contained in their individually issued NPDES permits so long as they remain members in an association. Association members will be exempted from their individual estuary allocations in the association NPDES permit as long as the association is in compliance with its estuary allocation. If the association fails to meet its estuary allocation, the association and the members that have failed to meet their individual estuary allocations in the association NPDES permit will be out of compliance with the association NPDES permit.)</p>

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<p>WA.15.</p> <p>STATE PERMITS</p> <p>WA.15.1.NC. Waste disposal systems that discharge waste onto or below land surfaces operated under a permit or permit by rule/regulation (15A NCAC 2T.0101, 2T.0102, 2T.0104, 2T.0105, 2T.0109, 2T.0117, and NCGS 143-215.1(a)) [Revised March 2007].</p>	<p>(NOTE: This checklist item applies to all of the following systems that do not discharge to surface waters of the state, including systems that discharge waste onto or below land surface:</p> <ul style="list-style-type: none"> -any sewer system - treatment works - disposal system - contaminates soil treatment system - animal waste management system - stormwater management system - residual disposal/utilization system <p>This checklist item does not apply to sanitary sewage systems or solid waste management facilities that are permitted under the authority of the Commission for Health Services.)</p> <p>Verify that the following activities obtain a permit from the Division (or if appropriate, a local program approved by the Division):</p> <ul style="list-style-type: none"> - making any outlets into the waters of the State - constructing or operating any sewer system, treatment works, or disposal system - altering, extending, or changing the construction or method of operation of any sewer system, treatment works, or disposal system - increasing the quantity of waste discharged through any outlet or processed in any treatment works or disposal system to any extent that would result in any violation of the effluent standards or limitations established for any point source or that would adversely affect the condition of the receiving waters to the extent of violating any applicable standard - changing the nature of the waste discharged through any disposal system in any way that would exceed the effluent standards or limitations established for any point source or that would adversely affect the condition of the receiving waters in relation to any applicable standard - causing or permitting any waste, directly or indirectly, to be discharged to or in any manner intermixed with the waters of the State in violation of the water quality standards applicable to the assigned classifications or in violation of any effluent standards or limitations established for any point source - causing or permitting any wastes for which pretreatment is required by pretreatment standards to be discharged, directly or indirectly, from a pretreatment facility to any disposal system or to alter, extend or change the construction or method of operation - entering into a contract for the construction and installation of any outlet, sewer system, treatment works, pretreatment facility or disposal system or for the alteration or extension of any such facility - disposing of sludge resulting from the operation of a treatment works,

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	<p>including the removal of in-place sewage sludge from one location and its deposit at another location</p> <ul style="list-style-type: none"> - causing or permitting any pollutant to enter into a defined managed area of the State's waters for the maintenance or production of harvestable freshwater, estuarine, or marine plants or animals - causing or permitting discharges that result in water pollution - constructing or operating an animal waste management system. <p>Verify that designs for permitted facilities use practicable waste treatment and disposal alternative with the least adverse impact on the environment.</p> <p>Verify that permitted facilities comply with setbacks and required separation distances (see Appendix 12-4)</p> <p>Verify that the permittee keep permits active until the waste treatment systems authorized by the permit are properly closed or subsequently permitted under another permit issued by the appropriate permitting authority for that activity.</p> <p>Verify that monitoring of waste and surface waters is completed.</p> <p>Verify that monitoring of groundwater is completed.</p> <p>Verify that requests for permit renewals are submitted to the Director at least 180 days prior to expiration.</p> <p>Verify that the permittee designates an Operator in Responsible Charge and a back-up operator as required by the Water Pollution Control System Operators Certification Commission.</p> <p>Verify that the Operator in Responsible Charge, or a back-up operator when appropriate operates and visits the facility as required (see WA.20.9.NC.).</p>
WA.15.2.NC. [Moved February 1999].	<p>(NOTE: This checklist item moved to WA.100.10.NC.; February 1999.)</p>
WA.15.3.NC. Facilities must submit a Notice of Intent to obtain coverage under a general permit for a disposal and/or treatment system (15A NCAC 2T.0111 (a), (d) and (e)) [Added March 2007].	<p>(NOTE: General permits may be written for categories of activities that involve the same or substantially similar operations, have similar treated waste characteristics, require the same limitations or operating conditions, and require the same or similar monitoring.)</p> <p>Verify that a Notice of Intent is submitted to the Division.</p> <p>Verify that the facility receives a certificate of coverage indicating Division approval.</p>

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<p>WA.15.4.NC. Waste disposal permitted by regulation must meet specific requirements (15A NCAC 2T.0113) [Added March 2007].</p>	<p>Verify that general permits are renewed every 5 years.</p> <p>(NOTE: If the Division does not renew a general permit, all operations covered under that general permit must submit applications for individual permits.)</p> <p>Verify that facilities covered under general permits operate under the same limits, conditions, management practices, enforcement authorities, and rights and privileges as specified in the general permit.</p> <p>(NOTE: This checklist item applies to following listed disposal system are not required to have an individual permit or coverage under a general permit for construction or operation of the disposal systems provided the system does not result in any violations of surface water or groundwater standards and there is no direct discharge to surface waters:</p> <ul style="list-style-type: none"> - swimming pool and spa filter backwash and drainage, filter backwash from aesthetic fountains, filter backwash from commercial or residential water features such as garden ponds or fish ponds that is discharged to the land surface does not directly discharge to surface waters or violate surface water or groundwater standards - backwash from raw water intake screening devices that is discharged to the land surface - condensate from residential or commercial air conditioning units that is discharged to the land surface - discharges to the land surface from individual non-commercial car washing operations - discharges to the land surface from flushing and hydrostatic testing water associated with utility distribution systems, new sewer extensions or new reclaimed water distribution lines - street wash water that is discharged to the land surface - discharges to the land surface from fire fighting activities - discharges to the land surface associated with emergency removal and treatment activities for spilled oil authorized by the federal or state on-scene coordinator - drilling muds, cuttings and well water from the development of wells or from other construction activities including directional boring - purge water from groundwater monitoring wells - overflow from elevated potable water storage facilities - mine tailings where no chemicals are used in the mining process - mine dewatering where no chemicals are used in the mining process - wastewater created from the washing of produce, with no further processing on-site, on farms where the wastewater is irrigated onto fields so as not to create runoff or cause a discharge.) <p>Verify that facilities permitted by regulation do not violate any assigned surface water, groundwater, or air quality standards.</p> <p>Verify that any violation or discharge to surface waters from the disposal systems</p>

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<p>WA.15.5.NC. A permitted waste disposal system may be required to have an operator in responsible charge and a backup operator (ORC) (15A NCAC 2T.0117) [Revised March 2007].</p>	<p>is reported.</p> <p>Verify that discharges to the land surface associated with biological or chemical decontamination activities performed as a result of an emergency meet the following criteria:</p> <ul style="list-style-type: none"> - the volume produced by the decontamination activity is too large to be contained onsite - the Division is informed prior to commencement of the decontamination activity - the wastewater is not radiologically contaminated or classified as hazardous waste. <p>Verify that composting facilities for dead animals meet the following criteria:</p> <ul style="list-style-type: none"> - the construction and operation of the facilities is approved by the North Carolina Department of Agriculture and Consumer Services - the facilities are constructed on an impervious, weight-bearing foundation, operated under a roof - the facilities are approved by the State Veterinarian. <p>Verify that mobile carwashes meet the following criteria:</p> <ul style="list-style-type: none"> - all detergents used are biodegradable - no steam cleaning, engine or parts cleaning is being conducted - notification is made prior to operation by the owner to the municipality or if not in a municipality then the county where the cleaning service is being provided - all non-recyclable washwater is collected and discharged into a sanitary sewer or wastewater treatment facility upon approval of the facility's owner. <p>(NOTE: Permitting by regulation does not apply to facilities requiring a state/NPDES permit is otherwise required.)</p> <p>(NOTE: The Director may determine that a disposal system should not be deemed to be permitted by regulation and require the disposal system to obtain an individual permit or a certificate of coverage under a general permit.)</p> <p>Verify that an operator in responsible charge and a back-up operator are designated (as established in 15A NCAC 08F.0200 and 15A NCAC 08G.0200).</p> <p>Verify that, in order to insure proper operation and maintenance of permitted facilities, the ORC, or a back-up operator when appropriate, operates and visits the facility as required by 15A NCAC 08F.0200 and 15A NCAC 08G.0200.</p> <p>(NOTE: The following must meet operator requirements:</p> <ul style="list-style-type: none"> - operators of animal waste management systems - biological water pollution control treatment systems

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<p>WA.15.6.NC. The pumping and hauling of wastewater permitted by regulation must meet specific notification and management requirements (15A NCAC 2T.0201, 2T.0203, and 2T.0204) [Added March 2007].</p>	<ul style="list-style-type: none"> - water pollution control collection systems - land application of residuals systems - physical/chemical water pollution control treatment systems - subsurface water pollution control systems - systems not otherwise classified.) <p>(NOTE: This checklist item applies to all pump and haul activities of wastewater. This checklist item does not apply to the transport of animal waste from animal waste management systems or to the transport of wastewater residuals or biosolids.)</p> <p>Verify that washwater from single-beverage kiosks and similar operations not regulated under the authority of the Division of Environmental Health meet the following criteria:</p> <ul style="list-style-type: none"> - the appropriate Division regional office is notified in writing advising of the type of operation, type and quantity of wastewater generated, and the receiving wastewater treatment facility - the wastewater does not contain any human waste - the waste is collected and discharged into a sewer or treatment system designed and permitted to accept the type of wastewater being pumped and hauled. <p>Verify that industrial wastewater meets the following criteria:</p> <ul style="list-style-type: none"> - the appropriate Division regional office is notified in writing advising of the type of operation, type and quantity of wastewater generated, location, and the receiving wastewater treatment facility - the wastewater does not contain any human waste - the waste is collected and discharged into a sewer or treatment system designed and permitted to accept the type of wastewater being pumped and hauled - the pump and haul activity is not to alleviate a failing wastewater system. - the Division regional office concurs in writing that the activity meets the criteria. <p>Verify that pump and haul permits are not used as long-term domestic wastewater treatment alternatives.</p> <p>Verify that pump and haul facilities include, at a minimum, 24 hours storage with high-water alarms.</p> <p>Verify that permitted pump and haul facilities or activities are inspected at least daily by the permittee or his representative.</p> <p>(NOTE: Pump and hauling of waste from sewer cleaning activities is also</p>

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<p>WA.15.7.NC. Other non-discharge wastewater systems must meet permit requirements (15A NCAC 2T.0801, 2T.0804, 2T.0805, and 2T.0806) [Added March 2007].</p>	<p>permitted by regulation and does not have additional criteria.)</p> <p>(NOTE: This check list item applies to systems not specifically regulated by other rules in which the waste is disposed of by ground absorption systems or other non-discharge systems such as infiltration lagoons and evaporative system as well as authorizations to construct for NPDES facilities.)</p> <p>Verify that other non-discharge wastewater systems have obtained a permit.</p> <p>(NOTE: Submittal requirements are the same as systems permitted under 15A NCAC 02T .0504 except those that are not applicable to authorization to construct type permits (e.g., soils report, hydrogeological investigations, or receiver site management plan).)</p> <p>(NOTE: The design requirements are the same those listed for wastewater irrigation systems (see 02T.0505.), except those that are not applicable to authorization to construct type permits (e.g. degree of treatment and irrigation system design requirements) or specifically addressed.)</p> <p>(NOTE: Setbacks for other non-discharge wastewater systems are the same as those listed for wastewater irrigation systems except infiltration basins, which meet the setbacks for infiltration units (see Appendix 12-4).)</p>
<p>WA.15.8.NC. Groundwater treatment systems must be permitted and meet management, operational, and closure requirements (15A NCAC 2T.1601, 2T.1604, 2T.1607, 2T.1608) [Added March 2007].</p>	<p>(NOTE: This checklist item applies to all persons proposing to construct, modify, expand, or operate a groundwater treatment system that extracts and treats contaminated groundwater and reintroduces the treated groundwater. These include closed-loop groundwater remediation systems that typically use infiltration galleries or injection wells. This checklist item does not apply to in-situ groundwater remediation wells, unless the system includes the withdrawal, treatment, and reintroduction of the treated groundwater.)</p> <p>Verify that groundwater treatment systems have a permit.</p> <p>Verify that the operation and monitoring plans are specific to the site Verify that all sampling results are reported to the Division on a frequency determined by the reaction rates, discharge rates, likelihood of secondary impacts, and site-specific hydrogeologic information.</p> <p>Verify that an annual report of the summarized results of related groundwater, influent, and effluent monitoring is submitted to the Division.</p> <p>Verify that 30 days prior to initiation of closure of a groundwater remediation system, the following documentation is submitted to the Division:</p> <ul style="list-style-type: none"> - the reason(s) for closure - a letter from the oversight agency authorizing closure of the system

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	<p>- a description of the proposed closure procedure.</p> <p>Verify that closed infiltration galleries are rendered permanently unusable for the disposal or infiltration of fluids and will not serve as a source or channel of contamination.</p> <p>Verify that within 30 days following upon completion of the closure of a groundwater remediation system, the following documentation is submitted to the Division:</p> <ul style="list-style-type: none"> - a description of the completed closure procedure - the dates of all actions taken relative to the procedure - a written certification that the closure has been accomplished, and that the information submitted is complete, factual and accurate.

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WA.20. TREATMENT WORKS WA.20.1.NC. [Deleted March 2007] WA.20.2.NC. [Deleted March 2007]. WA.20.3.NC. Sewer systems and sewer system extensions must meet specific minimum design requirements (15A NCAC 2T.0301 and 2T.0305 (a) through (i)) [Revised March 2007].	<p>(NOTE: 15A NCAC 2H.0219.0205 and 2H.0202 repealed.)</p> <p>(NOTE: 15A NCAC 2H.0219 repealed.)</p> <p>(NOTE: This checklist item applies to all sewer extensions including gravity sewers, pump stations, force mains, vacuum sewers, pressure sewers (including Septic Tank Effluent Pump (STEP) systems) or alternative sewer systems that discharge to another sewer system.)</p> <p>Verify that sewers and sewer extensions are not constructed in the following areas unless the Commission agrees that no prudent, feasible or technologically possible alternative exists:</p> <ul style="list-style-type: none"> - in a natural area designated on the State Registry of Natural Heritage Areas by a protection agreement between the owner and the Secretary - in a natural area dedicated as a North Carolina Nature Preserve by mutual agreement between the owner and State of North Carolina (Governor and Council of State). <p>Verify that there are no by-pass or overflow lines are used in any new sewer system except for valved piping and appurtenances intended for emergency pumping operation(s).</p> <p>Verify that a minimum of 2 feet protection from a 100-year flood is provided unless there is a water-tight seal on all station hatches and manholes with control panels and vents extending 2 feet above the 100-year flood elevation.</p> <p>Verify that the minimum separations listed in Appendix 12-14 are met.</p> <p>Verify that the following criteria is met for all pumping stations and force mains:</p> <ul style="list-style-type: none"> - pump stations are designed with multiple pumps such that peak flow can be pumped with the largest pump out of service - all pump stations have a standby power source or pump - controls are provided to automatically activate the standby source and signal an alarm condition - for pump stations with an average daily design flow less than 15,000 gallons per day, a portable power source or pumping capability may be utilized

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	<ul style="list-style-type: none"> - for pump or vacuum stations connecting a single building to an alternative sewer system, wet well storage requirements are documented to provide 24-hours worth of wastewater storage or, exceed the greatest power outage over the last 3 years or the documented response time to replace a failed pump, whichever is greater - all pump stations designed for two pumps or more have a telemetry system to provide remote notification of a problem condition to include power failure and high water alarm - pump stations have a permanent weatherproof sign stating the pump station identifier, 24-hour emergency number and instructions to call in case of emergency - simplex pump or vacuum stations serving a single-family residence have a placard or sticker placed inside the control panel with a 24-hour emergency contact number - screened vents for all wet wells - the public is restricted access to the site and equipment - air relief valves are provided at all high points along force mains where the vertical distance exceeds 10 feet. <p>Verify that the following criteria is met for gravity sewers:</p> <ul style="list-style-type: none"> - public gravity sewers have a minimum 8 inch diameter pipe - private gravity sewers have a minimum 6 inch diameter pipe - the maximum separation between manholes is 425 feet - drop manholes are provided where invert separations exceed 2.5 feet.
WA.20.4.NC. [Deleted March 2006].	(NOTE: 15A NCAC 2H.0219 repealed.)
WA.20.5.NC. Permitted sewer systems, treatment works, utilization systems, and disposal systems must submit a certification before commencing operation (15A NCAC 2T.0116) [Revised March 2007].	<p>Verify that, prior to beginning operation of any sewer system, treatment works, utilization system, or disposal system for which an individual permit has been issued, a certification is submitted to the Division from a professional engineer certifying that the sewer system, treatment works, or disposal system has been installed in accordance with approved plans and specifications.</p> <p>(NOTE: For facilities with phased construction or where there is a need to operate certain equipment under actual operating conditions prior to certification, additional certification may be needed as follow-ups to the initial, pre-operation certification.)</p> <p>Verify that the permittee tracks the submittal of certifications.</p>
WA.20.6.NC. [Deleted]	(NOTE: See WA.20.6.NC.)

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<p>March 2007].</p> <p>WA.20.7.NC. Municipal wastewater treatment works, or any other operation with a discharge consisting primarily of domestic sewage, must meet specific effluent limitations (15A NCAC 2B.0406(a)).</p> <p>WA.20.8.NC. [Moved March 2007].</p> <p>WA.20.9.NC. The operator in responsible charge (ORC) of water pollution control system must meet specific requirements (15A NCAC 8G.0204) [Revised March 2007].</p>	<p>(NOTE: Municipal treatment waste discharges will also be subject to limits applicable to industrial categories if industrial waste discharges in any single category constitute 10 or more percent of average daily wastewater flow to the system or where the system and effluent discharge are significantly impacted.)</p> <p>Verify that the effluent limitations found in Appendix 12-5 are met, except for discharges from waste stabilization ponds.</p> <p>Verify that effluent limitations for waste stabilization ponds found in Appendix 12-6 are met if all of the following criteria are true:</p> <ul style="list-style-type: none"> - waste stabilization ponds are the sole process used for secondary treatment - the maximum facility design capacity is 2,000,000 gal/day or less - operation and maintenance data indicate that requirements for total suspended solids (TSS) for all other domestic sewage discharges cannot be achieved. <p>(NOTE: 15A NCAC 2H.0224 and 8C repealed.)</p> <p>Verify that the operator possesses a valid certificate of the appropriate type and grade for the system.</p> <p>Verify that the designated ORC is responsible for, and visits, the system as often as is necessary to insure the proper operation of the system but in no case less frequently than specified in the following schedule, unless otherwise specified in permit:</p> <ul style="list-style-type: none"> - at least weekly - each biological grade I system and spray irrigation facility - at least 5 days per week, excluding holidays - biological grade II, III, and IV systems - weekly - surface irrigation systems aerobic treatment units (ATUs) with a flow of up to 1500 gpd of domestic wastewater - collection systems; within 24 hours of knowledge of a bypass, spill, or overflow of wastewater from the system unless visited by a collection system Back-up Operator in Responsible Charge - domestic wastewater systems with a treatment capacity of 1500 gallons per day or less; twice per year with a six month interval between visits - domestic wastewater aerobic treatment units (ATUs) with a treatment capacity of 1500 gallons per day or less; weekly - physical/chemical systems: <ul style="list-style-type: none"> - grade I systems, including groundwater remediation systems; weekly

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		<ul style="list-style-type: none"> - grade II systems; five days per week, excluding holidays - land application systems during or within 48 hours after application of residuals. <p>(NOTE: See Appendix 12-7 for classification of water pollution control systems.)</p> <p>Verify that the ORC operates and maintains the system efficiently and attempts to insure the compliance of the system with any permit(s) issued for the system as well as any other applicable local, state, and federal environmental permitting and regulatory requirements.</p> <p>Verify that the ORC certifies, by signature, as to the validity of all monitoring and reporting information performed on the system as prescribed in any permit issued for the system and provides the owner a copy.</p> <p>Verify that the ORC documents the operation, maintenance, and all visitations of the system in a daily log that is maintained at the system,</p> <p>Verify that the ORC notifies the owner of the system as soon as possible, and in writing within 5 calendar days of first knowledge, of any:</p> <ul style="list-style-type: none"> - overflows from the system or any treatment process unit - bypasses of the system or any treatment process unit - violations of any limits or conditions of the permit. <p>Verify that the ORC notifies the owner, in writing, of the need for any system repairs and modifications that may be necessary to insure the compliance of the system with all local, state, and federal environmental permitting and regulatory requirements.</p> <p>Verify that the ORC is available:</p> <ul style="list-style-type: none"> - for consultations with the system owner and regulatory officials - to handle emergency situations - to provide access to the facility by regulatory agencies. <p>Verify that the ORC, upon vacating an ORC position, notifies the Commission and the appropriate regional office of the Division of Water Quality (or the local health department for owners of subsurface systems) of the vacancy, in writing within 14 calendar days.</p>
WA.20.10.NC. March 2007].	[Deleted]	(NOTE: 15A NCAC 8A.0202 repealed.)
WA.20.11.NC.	[Deleted]	(NOTE: 15A NCAC 8A.0202 repealed.)

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<p>DISCHARGES TO A POTW/FOTW</p> <p>WA.30. Pretreatment Standards</p> <p>WA.30.1.NC. A POTW receiving industrial discharges must develop and implement a pretreatment program (15A NCAC 2H.0902 and 2H.0905).</p>	<p>Determine whether the POTW is subject to pretreatment standards or receives either of the following:</p> <ul style="list-style-type: none"> - pollutants from nondomestic sources covered by pretreatment standards which are indirectly discharged into or transported by truck or rail or otherwise introduced into the POTW - wastewater from sources subject to pretreatment standards. <p>(NOTE: These pretreatment standards do not apply to sources which discharge to a sewer not connected to a POTW treatment plant.)</p> <p>Verify that a POTW pretreatment program is developed and submitted for approval in accordance with the requirements in 40 CFR Part 403.8(f) and Part 403.9.</p>

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<p>DISCHARGES TO A POTW/FOTW</p> <p>WA.35. Industrial Users</p> <p>WA.35.1.NC. All significant industrial users (SIUs) who discharge waste into a POTW or who construct or operate a pretreatment facility must have a permit (15A NCAC 2H.0916).</p>	<p>Verify that these SIUs have a permit from the Control Authority and comply with that permit.</p>

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<p>DISCHARGES TO A POTW/FOTW</p> <p>WA.40. Documentation/ Reporting to the POTW</p> <p>WA.40.1.NC. POTWs receiving industrial discharges and industrial users discharging to the POTW must meet recordkeeping requirements (15A NCAC 2H.0908).</p>	<p>Verify that the POTW and industrial users meet the reporting requirements found in 40 CFR Part 403.12 (see U. S. TEAM Guide WA.25.3 through WA.25.8)</p> <p>Verify that POTWs with active approved pretreatment programs submit once a year, according to a schedule established by the Director, a pretreatment report describing its pretreatment activities over the previous 12 mo.</p> <p>Verify that the report contains the following information in accordance with forms specified by the Division:</p> <ul style="list-style-type: none"> - narrative summary of actions taken by the permittee to ensure compliance with pretreatment requirements - pretreatment program summary - list of SIUs in noncompliance with pretreatment requirements, nature of the violations, and actions taken or proposed to correct the violations - allocation table listing permit information for all SIUs, including, but not limited to, permit limits, permit effective and expiration dates, and a comparison of total permitted loads to Division approved maximum allowable loadings of the POTW - other information which in the opinion of the Director is needed to determine compliance with implementation of the pretreatment program - description of all POTW and SIU waste reduction activities. <p>Verify that inactive approved pretreatment programs notify the Division when an SIU proposes to discharge to the POTW.</p> <p>Verify that POTWs and industrial users retain for minimally 3 yr records of monitoring activities and results, along with support information including annual pretreatment reports, general records, water quality records, and records of industrial impact on the POTW.</p> <p>Verify that support information for pretreatment permits are retained for 5yr.</p> <p>Verify that a summary of all SIU effluent monitoring data reported to the POTW by the industrial user, or obtained by the POTW, is maintained on Division-approved forms or in a format approved by the Division for review by the Division.</p>

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WA.95. OTHER DISCHARGES AND DISCHARGERS WA.95.1.NC. [Deleted March 2007]. WA.95.2.NC. Animal waste management systems permitted by regulation must meet specific requirements (15A NCAC 2T.1301 and 2T.1303) [Added March 2007]. WA.95.3.NC. Animal waste	<p>(NOTE: 5A NCAC 2H.0217 repealed.)</p> <p>(NOTE: This checklist applies to all persons proposing to construct, modify, expand, or operate an animal waste management system and that is not subject to NPDES requirements. This checklist item does not apply to manure haulers.)</p> <p>Verify that, if waste is land applied to land owned by the waste generator or under the waste generators authority, agronomic rates are met.</p> <p>Verify that poultry operations use a dry litter system with more than 30,000 birds are deemed permitted, when all the following conditions are met:</p> <ul style="list-style-type: none"> - records are maintained for 3 years that include: <ul style="list-style-type: none"> - the dates the litter was removed - the estimated amount of litter removed - the location of the sites where the litter was land applied by the poultry operation - the waste is applied at no greater than agronomic rates - litter is stockpiled not closer than 100 feet from a perennial stream or perennial waterbody - litter is not stockpiled uncovered for greater than 15 days - if a manure hauler is used, records are maintained including: <ul style="list-style-type: none"> -the dates the litter was removed - the estimated amount of litter removed - name, address and phone number of the manure hauler. <p>Verify that land application sites under separate ownership from the waste generator, receiving animal waste from animal waste management systems are deemed permitted, when all the following conditions are met:</p> <ul style="list-style-type: none"> - the waste is applied at no greater than agronomic rates - a vegetative buffer (separation) of at least 25 feet is maintained from a perennial stream or perennial waterbody. <p>(NOTE: The Director may determine that a system should not be deemed permitted by regulation and require an individual permit.)</p> <p>(NOTE: This checklist applies to all persons proposing to construct, modify,</p>

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<p>management systems not subject to NPDES must meet specific requirements (15A NCAC 2T.1301 and 2T.1304) [Added March 2007; Revised March 2009].</p>	<p>expand, or operate an animal waste management system and are not subject to NPDES requirements. This checklist item does not apply to manure haulers.)</p> <p>Verify that an animal waste management plan is submitted as follows:</p> <ul style="list-style-type: none"> - plans are approved by any technical specialist - new and expanded animal waste treatment systems such as lagoons and waste storage structures are located at least 100 feet from a perennial stream or perennial waterbody - the waste is not applied at greater than agronomic rates. <p>Verify that, for animal waste management facilities desiring to increase their animal population beyond that currently permitted, a new individual permit or new certificate of coverage to operate under a general permit is issued before the additional animals are stocked.</p> <p>Verify that for each change of ownership of the system, the new owner notifies the Division in writing within 60 days of transfer of ownership.</p> <p>Verify that new and expanded swine facilities (after January 1, 2009) demonstrate compliance with .1307 (see WA.95.8.NC.) prior to receiving a permit from the Division.</p>
<p>WA.95.4.NC. Animal waste management systems required to have an NPDES permit must meet specific requirements (15A NCAC 2T.1301 and 2T.1305) [Added March 2007].</p>	<p>(NOTE: This checklist applies to all persons proposing to construct, modify, expand, or operate an animal waste management system that are subject to NPDES requirements. This checklist item does not apply to manure haulers.)</p> <p>Verify that an animal waste management plan is submitted.</p> <p>Verify that, when animal waste management facilities want to increase their animal population beyond what is currently permitted, a new individual permit or new certificate of coverage to operate under a general permit is issued before the additional animals are stocked.</p> <p>Verify that for each change of ownership of the system, the new owner notifies the Division in writing within 60 days of transfer of ownership.</p> <p>Verify that systems meet all applicable requirements of 40 CFR Part 122 and 40 CFR Part 412.</p>
<p>WA.95.5.NC. Closure of animal waste management systems must meet specific requirements (15A NCAC 2T.1301 and 2T.1306)</p>	<p>(NOTE: This checklist applies to all persons proposing to construct, modify, expand, or operate an animal waste management system. This checklist item does not apply to manure haulers.)</p> <p>Verify that any permitted containment basin, such as a lagoon or a waste storage structure, continue to be subject to the conditions and requirements of the facility's</p>

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<p>WA.95.8.NC. Swine waste management systems must meet performance requirements (15A NCAC 2T.1307) [Added March 2007].</p>	<ul style="list-style-type: none"> - name, mailing address, and phone number of the Manure Hauler - dates, locations, and amounts of animal waste received - dates, locations, application rate, acreage, waste analysis, and receiving crop of all animal waste land applied. <p>Verify that annual reports are submitted by March 1 for the preceding calendar year.</p> <p>Verify that animal waste management system that serves a swine farm requiring permit meet all of the following performance standards.</p> <p>Verify that the discharge of animal waste to surface waters and groundwater through direct discharge, seepage, or runoff is eliminated by:</p> <ul style="list-style-type: none"> - earthen structures designed and constructed with synthetic liners to eliminate seepage - solids storage structures meet applicable engineering practices and NRCS design standards. <p>Verify that the Certified Animal Waste Management Plan (CAWMP) meets current NRCS standards for a Comprehensive Nutrient Management Plan (CNMP) as defined by Part 600, Subpart E of the NRCS National Planning Procedures Handbook.</p> <p>Verify that swine waste treatment structures that automatically convey swine waste using pumps meet the following requirements:</p> <ul style="list-style-type: none"> - have audible and visible high water alarms with an auto dialer device set to contact the farm owner or farm manager - have a gravity overflow to a basin that can contain the flow rate of the largest pump in the system for the maximum amount of time that an operator will not be on-site - have a secondary containment structure designed, constructed, and operated to contain the volume of the largest animal waste treatment structure and the flow rate of the largest pump in the system for the maximum amount of time that an operator will not be on-site. <p>Verify that no more than the equivalent volume of one month of design flow of untreated swine waste is accumulated and stored prior to the initiation of treatment.</p> <p>Verify that Substantially eliminate atmospheric emission of ammonias substantially eliminated by:</p> <ul style="list-style-type: none"> - combined ammonia emissions from swine waste treatment and storage structures may not exceed an annual average of 0.2 kg NH₃-N/wk/1,000 kg of steady-state live weight - ammonia emissions from land application sites does not exceed an annual

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<p>WA.95.9.NC. Swine waste management systems must meet permit requirements (15A NCAC 2T.1308) [Added March 2007].</p>	<p>average of 0.2 kg NH₃-N/wk/1,000 kg of steady-state live weight - ammonia emissions from the swine farm does not exceed an annual average of 0.9 kg NH₃-N/wk/1,000 kg of steady-state live weight.</p> <p>Verify that the emission of odor that is detectable beyond the boundaries of the parcel or tract of land on which the swine farm is located is substantially eliminated.</p> <p>Verify that swine waste management systems reduce odor levels, frequency, and duration from the whole farm, such that the requirements of 15A NCAC 02D .1808 are met at the property boundary.</p> <p>Verify that swine waste management systems meet the vector attraction reduction requirements in for the land application of separated solids and biological residuals.</p> <p>Verify that swine waste management systems meet the pathogen reduction requirements in Rule .1106 of this Subchapter for Class A biosolids that are to be land applied pursuant to Rule .1106(a)(1) or for Class B biosolids that are to be otherwise applied to land.</p> <p>Verify that fecal coliform concentrations in the final liquid effluent do not exceed an annual average of 7,000 Most Probable Number/100mL.</p> <p>Verify that the swine waste management systems that land apply effluent meets the following:</p> <ul style="list-style-type: none"> - the current NRCS requirements for a Comprehensive Nutrient Management Plan (CNMP) as defined by Part 600, Subpart E of the NRCS National Planning Procedures Handbook - demonstrate through predictive calculations or modeling that land application of swine waste at the proposed rate will not cause or contribute to a violation of groundwater standards under 15A NCAC 02L. <p>Verify that the swine waste management system meets the performance standards in WA.95.8.NC.</p> <p>Verify that a permit is obtained from the Division.</p> <p>Verify that, once the newly permitted system reaches full capacity or within six months, whichever comes sooner, the permittee monitors system performance for 2 years with quarterly sampling to assure that the treatment system is meeting performance standards.</p> <p>Verify that, if after 2 years the treatment system is compliant the performance standards, the permittee monitor for compliance with the performance standards on the following schedule:</p>

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	<ul style="list-style-type: none"> - ammonia emissions monitoring from swine waste treatment and storage structures as follows: <ul style="list-style-type: none"> - ammonia air emissions from open-air structures is directly sampled once per calendar year, with alternating years having sampling during the summer and winter seasons - liquid from open-air waste treatment and storage structures is sampled at a minimum of once per quarter - monitoring of odor intensity is on an annual basis, with alternating years having sampling during the summer and winter seasons - effluent monitoring is at a minimum of once per quarter.

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<p>WA.100.</p> <p>INDIVIDUAL SEWAGE SYSTEMS</p> <p>WA.100.1.NC. Septic and dosing tanks must meet specific minimum design requirements (15A NCAC 18A.1952(a) and (d), and 18A.1953) [Revised February 2000].</p>	<p>Verify that the septic tank or dosing tank is watertight, structurally sound, and not subject to excessive corrosion or decay.</p> <p>Verify that septic tanks are of two-compartment design with the inlet compartment holding between 2/3 and 3/4 of the total tank capacity.</p> <p>Verify that septic tanks have approved effluent filter and access devices.</p> <p>Verify that a properly designed dosing siphon or pump is used for discharging sewage effluent into nitrification lines when the total length of such lines exceeds 750 linear ft in a single system, and as required for any pressure-dosed system.</p> <p>Verify that, when the design daily flow from a single system exceeds 3000 gpd or when the total length of nitrification lines exceeds 2000 linear ft in a single system, alternating siphons or pumps are used which discharge to separate nitrification fields.</p> <p>Verify that dose volume from pump or siphon systems is of such design as to fill the nitrification lines from 66 to 75 percent of their capacity at each discharge, except as required for low-pressure distribution of effluent throughout the nitrification field.</p> <p>Verify that the discharge rate from the dosing system is designed to maximize the distribution of the effluent throughout the nitrification field.</p> <p>Verify that septic tanks installed where the top will be deeper than 6 in. below finished grade have an access manhole over each compartment meeting the following criteria:</p> <ul style="list-style-type: none"> - has a cover - extends to within 6 in. of finished grade - has a minimum opening adequate to accommodate installation or removal of the septic tank lid, septage removal, and maintenance of the effluent filter. <p>Verify that, when the top of the septic tank or access manhole is below the finished grade, the location of each manhole is visibly marked at finished grade.</p> <p>Verify that any system serving a unit with a design sewage flow greater than 3000 gpd has access manholes that extend at least to finished grade and are designed and maintained to prevent surface water inflow.</p> <p>Verify that the manholes are sized to allow proper inspection and maintenance.</p>

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<p>WA.100.2.NC. Septic tanks located in coastal areas must meet specific requirements (15A NCAC 2H.0404(f)).</p>	<p>Verify that all dosing tanks have a properly functioning high-water alarm, audible and visible by system users, and weatherproof if installed outdoors.</p> <p>Verify that the alarm circuit is provided with a manual disconnect in a watertight, corrosion-resistant outside enclosure adjacent to the dosing tank.</p> <p>Verify that, when prefabricated concrete tanks or tanks of other material are used, they are constructed in accordance with plans approved by the state and comply with all requirements of this section.</p> <p>Verify that tanks other than approved prefabricated tanks are constructed consistent with these requirements, except as follows:</p> <ul style="list-style-type: none"> - cast-in-place concrete septic and pump tanks have a minimum wall thickness of 6 in. - concrete block or brick masonry tanks have: <ul style="list-style-type: none"> - a minimum wall thickness of at least 6 in. when design volume is less than 1000 gal and a minimum wall thickness of at least 8 in. when design volume is 1000 gal or more - all joints between masonry units are mortared using masonry cement mortar or equivalent - the joints have a nominal thickness of 3/8 in. - all concrete masonry tanks have a minimum wall reinforcement of number 3 reinforcing bars on 20-in. centers, or equivalent - the maximum allowable reinforcement spacing in either direction is 4 ft - all block wall cores are filled with concrete with a minimum compressive strength of 3000 psi - all tanks constructed of block or brick are plastered on the inside with a 1:3 mix (one part cement, 3 parts sand) of Portland cement at least 3/8 in. thick or the equivalent using other approved waterproofing material - the bottom of the built-in-place tank is poured concrete with a minimum thickness of 4 in. - all built-in-place tanks are reinforced to satisfy structural strength requirements - reinforcement is placed in both directions throughout the entire built-in-place tank, including top, bottom, walls, and ends. <p>(NOTE: Septic tank systems are not approved in high density areas. For purposes of this requirement, high density areas are defined as those areas producing more than 1200 gal of waste per acre per day or which contain more than 3 residential units per acre.)</p> <p>Verify that a septic tank system is designed and constructed in accordance with Environmental Management Commission regulations governing septic tank systems.</p>

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WA.100.3.NC. Privies must meet specific construction requirements (15A NCAC 18A.1959).	<p>Verify that the privy consists of a pit, floor slab, and seat assembly housed in a building that affords privacy and reasonable protection from the weather.</p> <p>Verify that the pit consists of an excavation of at least 42 in.² and in no case is the bottom of an excavation closer than 1 ft from the seasonally high water table or rock.</p> <p>Verify that the pit is properly curbed to prevent caving:</p> <ul style="list-style-type: none"> - in sandy or loose soil, the curb extends the full depth of the pit - in tight soils, partial curbing is acceptable if it prevents caving. <p>Verify that the privy floor slab is constructed of reinforced concrete.</p> <p>(NOTE: When impractical to secure or construct reinforced concrete floor assemblies, wood construction is accepted, provided the floor slab is made of rough sub-flooring and covered with tight tongue-and-groove flooring or other type flooring materials to provide strength and prevent entrance of flies and mosquitoes to the privy pit.)</p> <p>Verify that, where wood construction is used, floors are anchored to at least 4-in. by 4-in. sills.</p> <p>Verify that wood used for riser, seat assemblies, and the floor slabs are tongue-and-groove or plywood (exterior or marine) material.</p> <p>Verify that privies are not used for the disposal of water-carried sewage.</p>
WA.100.4.NC. Privies must be maintained according to specific requirements (15A NCAC 18A.1960).	<p>Verify that the privy building affords a reasonable degree of protection from bad weather conditions.</p> <p>Verify that, when the pit is filled to within 18 in. of the top of the ground, the privy building is moved to a new pit and the old pit is completely covered with earth.</p> <p>Verify that, if the pit caves in, a new pit is provided.</p> <p>Verify that the following additional maintenance requirements are met:</p> <ul style="list-style-type: none"> - walls, floors, and seat of the privy and grounds immediately adjacent to the building are kept in a clean and decent condition - fowl and other animals are not harbored in the privy building - seat cover is hinged and closed at all times when the privy is not in use - flies are excluded from the pit at all times - ashes, garbage, and trash are kept out of the pit.

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<p>WA.100.5.NC. Septage management must meet specific restrictions and permit requirements (15A NCAC 13B.0817(a) through (c), 13B.0819(a), and 13B.0820(a) and (c)) [Revised March 2004].</p>	<p>Verify that any septage management firm has a permit.</p> <p>Verify that waste from portable toilets is not disposed of or managed, regardless of the ownership of the toilets, unless it is managed by a permitted septage management firm.</p> <p>Verify that septage is disposed of in one of the following manners:</p> <ul style="list-style-type: none"> - in a wastewater treatment system permitted to accept septage under the rules of the Commission for Health Services or the Environmental Management Commission - by land application at a permitted site. <p>Verify that septage is not disposed of by trenching or burial.</p> <p>Verify that septage management facilities are not established without a permit from the Division.</p> <p>Verify that septage management facilities do not operate without an NPDES permit.</p> <p>(NOTE: See WA.105.1.NC. through WA.130.6.NC. for additional requirements for septage detention and land application.)</p>
<p>WA.100.6.NC. All individual sanitary sewage treatment and disposal systems must meet specific separation requirements (15A NCAC 18A.1950).</p>	<p>Verify that every sanitary sewage treatment and disposal system meets the minimum horizontal distance requirements listed in Appendix 12-8:</p> <p>Verify that sites for subsurface disposal units with flows over 3000 gpd, including one or more nitrification fields with individual capacities of greater than 1500 gpd, meet the minimum horizontal distances outlined in Appendix 12-8.</p> <p>Verify that nitrification fields and repair areas are not located under paved areas or areas subject to vehicular traffic.</p> <p>Verify that, if effluent is to be conveyed under areas subject to vehicular traffic, ductile iron or its equivalent pipe is used.</p> <p>Verify that collection sewers, force mains, and supply lines are located at least the minimum horizontal distance outlined in Appendix 12-8.</p> <p>(NOTE: Sewer lines may cross a water line if 18 in. clear separation distance is maintained, with the sewer line passing under the water line.)</p> <p>Verify that, when conditions prevent an 18-in. clear separation from being maintained, or whenever it is necessary for the water line to cross under the sewer, the sewer line is constructed of ductile iron pipe or its equivalent and the water line is constructed of ferrous materials equivalent to water main standards for a distance of at least 10 ft on each side of the point of crossing, with full sections of</p>

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<p>WA.100.7.NC. Non-ground absorption sewage treatment systems must meet specific design requirements (15A NCAC 18A.1958) [Revised March 1998].</p>	<p>pipe centered at the point of crossing.</p> <p>(NOTE: Sewer lines may cross a storm drain if:</p> <ul style="list-style-type: none"> - 12 in. clear separation distance is maintained - the sewer is of ductile iron pipe or encased in concrete or ductile iron pipe for at least 5 ft on either side of the crossing.) <p>(NOTE: Sewer lines may cross a stream if at least 3 ft of stable cover can be maintained or the sewer line is of ductile iron pipe or encased in concrete or ductile iron pipe for at least 10 ft on either side of the crossing and protected against normal range of high and low water conditions, including the 100-yr flood/wave action.)</p> <p>Verify that aerial crossings are by ductile iron pipe with mechanical joints or steel pipe.</p> <p>Verify that the pipe is anchored for at least 10 ft on either side of the crossing.</p> <p>Verify that septic tanks, lift stations, wastewater treatment plants, sand filters, and other pretreatment systems are not located in areas subject to frequent flooding (areas inundated at a 10-yr or less frequency), unless designed and installed to be watertight and to remain operable during a 10-yr storm.</p> <p>Verify that mechanical or electrical components of treatment systems are above the 100-yr flood level or otherwise protected against a 100-yr flood.</p> <p>Verify that any nonground absorption treatment systems using heat or other approved means for reducing toilet contents to an inert or stabilized residue or to an otherwise harmless condition have received a permit.</p> <p>Verify that holding tanks are not used as a sewage treatment and disposal system.</p> <p>(NOTE: Sewage recycling systems which discharge treated wastewater meeting state drinking water standards may be used only for toilet flushing.)</p> <p>Verify that sewage recycling systems are approved by the state or local health department and recycled sewage is not used for body contact or human consumption.</p> <p>Verify that chemical and portable toilets for human waste meet the following requirements:</p> <ul style="list-style-type: none"> - chemical or portable toilets proposed for use at labor work camps have an operation permit from the local health department - waste receptacles are constructed of a watertight nonabsorbent, acid resistant and noncorrosive material - collected waste is discharged into an approved sewage treatment and disposal system.

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<p>WA.100.8.NC. Ground adsorption sewage treatment and disposal systems must meet specific maintenance requirements (15A NCAC 18A.1961) [Revised March 1998].</p>	<p>Verify that ground absorption sewage treatment and disposal systems are maintained at all times to prevent seepage or discharge of sewage or effluent to the surface of the ground or to surface waters.</p> <p>Verify that ground absorption sewage treatment and disposal systems are checked, and the contents of the septic tank removed, periodically to ensure proper operation of the system.</p> <p>Verify that any sewage system that creates or has created a public health hazard or nuisance due to any of the following is repaired within 30 days of notification by the state or local health department unless the notification otherwise specifies a repair period in writing:</p> <ul style="list-style-type: none"> - effluent surfacing - discharge directly into ground or surface waters - a sewage system that is partially or totally destroyed. <p>Verify that, if such a system has for any reason been disconnected, it is repaired prior to reuse.</p> <p>Verify that, if, for any reason, a sewage collection, treatment, and disposal system is nonrepairable, the system is not used.</p>
<p>WA.100.9.NC. A ground adsorption sewage disposal system must meet specific requirements if located on the watershed of a Class I or II reservoir or on the watershed of the portion of a stream classified as WS-I, WS-II, WS-III, WS-IV, or WS-V extending from a Class I reservoir to a downstream intake of a water purification plant (15A NCAC 18C.1211).</p>	<p>(NOTE: These requirements do not apply to those portions of a water supply reservoir watershed which are drained by waters classified other than for water supply use (WS-I, WS-II, WS-III, WS-IV, and WS-V; see WQ Appendix 13-12 through 13-14 in the <i>Water Quality Management</i> chapter).)</p> <p>Verify that the lot includes 40,000 ft² or more.</p> <p>Verify that the lot includes enough total area to equal an average of 40,000 ft² per residential dwelling unit for a multiple unit residential building or mobile home park.</p> <p>Verify that the lot includes enough total area to equal an average of 40,000 ft² for each business within a multiple unit place of business or place of public assembly.</p> <p>Verify that the lots for any business or place of public assembly for which the anticipated wastewater generated exceeds 1250 gpd require an additional 40,000 ft² of area per each additional 1250 gpd or portion thereof.</p>
<p>WA.100.10.NC. The improvement or operation of</p>	<p>(NOTE: This checklist item moved here from WA.15.2.NC.; February 1999.)</p>

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<p>certain individual sewage systems requires a permit (15A NCAC 18A.1934 and 18A.1937) [Revised March 2007].</p>	<p>(NOTE: This checklist item applies to the treatment and disposal of domestic type sewage from:</p> <ul style="list-style-type: none"> - septic tank systems - privies - incinerating toilets - mechanical toilets - composting toilets - recycling toilets - other such systems serving single or multiple-family residences, places of business, or places of public assembly. <p>The effluent is designed not to discharge to the land surface or surface waters.)</p> <p>Verify that any person owning or controlling a residence, place of business, or place of public assembly containing water-using fixtures connected to a water supply source discharges all wastewater directly to an approved wastewater system.</p> <p>Verify that an Improvement Permit is received from the local health department for subsequent additions, modifications, or change in the type of facility increase wastewater flow or alter wastewater characteristics.</p> <p>Verify that an Operation Permit or Certificate of Completion, issued after an inspection by the local health department, is received before the system is used.</p>
<p>WA.100.11.NC. Experimental, controlled demonstration, and innovative wastewater systems must have permits (15A NCAC 18A.1969) [Added March 2004].</p>	<p>(NOTE: Experimental, controlled demonstration, and innovative wastewater systems (hereinafter referred to as E & I systems) are any wastewater systems, system components, or devices that are not specifically described in Rules .1955, .1956, .1957, or .1958, including any system for which reductions are proposed in the minimum horizontal or vertical separation requirements or increases are proposed to the maximum long-term acceptance; or any E & I systems as defined by G.S. 130A -343(a) and approved.)</p> <p>Verify that the E & I system application is approved and the local health department has issued an Improvement Permit and a Construction Authorization for any innovative system approved by the State.</p> <p>(NOTE: Use of an innovative system and any conditions will be described on the Improvement Permit, Construction Authorization, or Operation Permit.)</p> <p>Verify that the conditions of the permit are met.</p>
<p>WA.100.12.NC. Individually permitted disposal systems discharging to groundwater must meet specific compliance boundary</p>	<p>(NOTE: Moved from WA.5.10.NC., March 2006.)</p> <p>(NOTE: For disposal systems individually permitted prior to December 30, 1983, the compliance boundary is established at a horizontal distance of 500 feet from the waste boundary or at the property boundary, whichever is closer to the</p>

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requirements (15A NCAC 2L.0107(d), (e), and (g)).	<p>source.)</p> <p>Verify that, for disposal systems individually permitted on or after December 30, 1983, a compliance boundary is established 250 feet from the waste boundary, or 50 feet within the property boundary, whichever point is closer to the source.</p> <p>(NOTE: These requirements do not apply to ground adsorption treatment systems serving 4 or fewer single family dwellings or multiunit dwellings of 4 or fewer units.)</p> <p>Verify that water supply wells are not constructed or operated within the compliance boundary of a permitted disposal system.</p> <p>Verify that land is not transferred within an established compliance boundary of a permitted disposal system unless the land is serviced by a community water system, the source of which is located outside the compliance boundary.</p> <p>Verify that land is not transferred within an established compliance boundary of a permitted disposal system unless the deed transferring the property contains all of the following:</p> <ul style="list-style-type: none"> - notice of the permit, including permit number, a description of the type of permit, and name, address, and telephone number of the permitting agency - a restrictive covenant running with the land and in favor of the permittee and the State, as a third party beneficiary, which prohibits construction and operation of water supply wells within the compliance boundary - a restrictive covenant running with the land and in favor of the permittee and the State, as a third party beneficiary, which grants the right to the permittee and the State to enter on such property within the compliance boundary for groundwater monitoring and remediation purposes.

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<p>LAND APPLICATION OF SLUDGE</p> <p>WA.105. General</p> <p>WA.105.1.NC. A septage land applications site must meet specific location requirements (15A NCAC 13B.0837(b), (c), (d), (f), and (g)) [Citation Revised March 1998; Revised March 2010].</p>	<p>Verify that septage land application sites are not located in the watershed of a Class WS-I stream.</p> <p>Verify that new septage land application sites are not located in the water quality critical area of Class WS-II, WS-III, or WS-IV streams or reservoirs.</p> <p>(NOTE: This prohibition does not apply to those portions of a water supply watershed which are drained by Class B or Class C streams.)</p> <p>Verify that all septage disposal sites meet the following minimum distance separations:</p> <ul style="list-style-type: none"> - residence not occupied by the applicant--500 ft; residence occupied by the applicant--100 ft - place of business, other than the facility, or place of public assembly--500 ft - well or spring--500 ft - fresh waters: <ul style="list-style-type: none"> - Class WS-I, Class WS-II, or Class WS-III streams--300 ft - Class B stream--300 ft - Class C stream--200 ft - other streams and bodies of water--200 - tidal salt waters <ul style="list-style-type: none"> - Class SA or Class SB--300 ft from mean high water mark - Class SC and other coastal waters--200 ft from mean high water mark - supplemental classifications: <ul style="list-style-type: none"> - trout waters and swamp waters--200 ft - nutrient sensitive waters and outstanding resource waters -- 300 ft - groundwater lowering ditches and devices--100 ft - adjoining property under separate ownership or control--50 ft - public road right of ways--100 ft - food crops--50 ft - wetlands--50 ft - woods line -- 5 feet, unless greater distance is required - land application site on the same tract of land, permitted to a different operator --100 ft. <p>(NOTE: Specific setbacks may be reduced 50 percent when septage is pretreated to accomplish pathogen reduction and when the land within the setback area is in permanent, established grass with at least 95 percent cover or when the setback area is in forest with a continuous canopy and 95 percent forest litter cover. Accurate property line locations are the responsibility of the site operator.)</p> <p>Verify that land application sites are not located where the slope of the land is</p>

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	<p>greater than 12 percent unless all of the following conditions are met:</p> <ul style="list-style-type: none"> - the site is in permanent, established grass with at least 95 percent cover or is in forest with a continuous canopy and a 95 percent forest litter cover - plans submitted to the Division are prepared in accordance with accepted erosion and runoff control practices and indicate the following: <ul style="list-style-type: none"> - management practices and discharge methods which will be used to reduce the potential for run-off from the site and assure even septage distribution over the site - location of potential surface water monitoring devices upslope and downslope from the area proposed to be permitted and identification of sampling methods (Monitoring may be required.) - setbacks will be increased and application rates decreased as appropriate to protect any nearby surface waters which are to be approved by the Division - no site includes slopes in excess of 25 percent. <p>Verify that a new septage land application site does not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of a critical habitat, protected under the Federal Endangered Species Act of 1973.</p>
<p>WA.105.2.NC. A septage land application site must meet specific design requirements (15A NCAC 13B.0838(a)(2), (3), and (10)).</p>	<p>Verify that each septage land application site meets the following signage requirements:</p> <ul style="list-style-type: none"> - is posted with NO TRESPASSING signs - access roads or paths crossing or leading to the disposal area are posted NO TRESPASSING - a legible sign of at least 2 ft by 2 ft stating SEPTAGE LAND APPLICATION SITE is maintained at each entrance to the land application area. <p>Verify that each septage land application site has an all weather access road.</p> <p>Verify that disposal area boundaries are clearly marked on the ground while a site or any portion of a site is in use.</p>
<p>WA.105.3.NC. [Deleted March 2007].</p>	<p>(NOTE: 15A NCAC 8C.0006 was repealed.)</p>
<p>WA.105.4.NC. Applications at septage land application sites must meet specific operating requirements (15A NCAC 13B.0838 (a)(1), (4), (7) through (9) and (11) through (15)) [Revised March</p>	<p>Verify that only domestic septage, as defined in GS 130A-290, is land applied or otherwise placed on a septage land application site, unless specified in the permit.</p> <p>Verify that no hazardous wastes are permitted on the site.</p> <p>Verify that septage generated from domestic, industrial, or commercial wastewater treatment plants is land applied only at sites permitted by the Division of Environmental Management for application of this type of septage, as defined</p>

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<p>2010].</p> <p>WA.105.5.NC. Land application systems must meet septage treatment requirements (15A NCAC 13B.0838 (c)) [Revised March 1998; Revised March 2010].</p>	<p>in GS 130A- 290.</p> <p>Verify that septage is applied to the surface of the land from a moving vehicle in such a manner as to have no standing liquid or soil disturbance resulting from the waste flow after the discharge is complete.</p> <p>Verify that septage is not applied to a site if any liquid is ponded on the site or if the site is flooded, frozen, or snow covered.</p> <p>Verify that septage is not applied to a site if the application method will result in ruts greater than three inches in the soil surface.</p> <p>Verify that all septage, including aerial drift from discharges, are made at a location on the site consistent with the nutrient management plan.</p> <p>Verify that land application of septage is limited to a maximum daily hydraulic application rate of one acre inch.</p> <p>Verify that grease septage from a grease trap, interceptor, separator, or other appurtenance used for the purpose of removing cooking oils, fats, grease, and food debris from the waste flow generated from food handling, preparation, and cleanup is not land applied unless the trap has been pumped within the last 90 days or the grease septage adequately screened or dewatered to prevent damage to land application site vegetation.</p> <p>Verify that grease septage is diluted at least 1:1 from its concentration when pumped with domestic septage or water if land applied over perennial vegetation.</p> <p>(NOTE: The dilution shall be increased if crop damage occurs. This dilution requirement shall not apply to the liquid portion of grease septage that has been adequately treated to remove solids, fats, oils and grease as long as crop damage does not occur.)</p> <p>Verify that domestic septage is treated in accordance with the requirements in 40 CFR Part 503 Subpart D (including Appendix A and B), except that 503.33(b)(11) is not incorporated (see U. S. TEAM Guide, WA.110.5).</p> <p>Verify that grease septage, treated grease septage, commercial or industrial treatment plant septage, and commercial/industrial septage are treated in accordance with 40 CFR 257.3-6 or treated by an equivalent or more stringent process in 40 CFR 503 Subpart D.</p> <p>Verify that grease septage, or any part of grease septage, mixed with domestic septage is treated as grease septage.</p> <p>Verify that domestic treatment plant septage is treated to meet the pathogen reduction and the vector attraction reduction requirements in 40 CFR 503, Subpart</p>

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<p>WA.105.6.NC. Land application systems must meet septage land application rates (15A NCAC 13B.0838 (b)) [Added March 2010].</p>	<p>D.</p> <p>Verify that domestic septage land application rates are in accordance with 40 CFR 503.12 (c) (see WA.105.7.US.).</p> <p>Verify that land application of domestic treatment plant septage does not exceed the rate in 40 CFR 503.14 (d) (see WA.105.5.US.).</p> <p>Verify that pollutant limits for regulated metals in 40 CFR 503.13 (WA.105.US.) are not exceeded for any type septage.</p> <p>Verify that grease septage is land applied at a rate that is equal to or less than the agronomic rate, but in no case is the application of untreated grease septage exceeds 25,000 gallons per acre per year.</p> <p>Verify that sites permitted for the land application of grease septage meet the requirements of 40 CFR 257.3-5.</p> <p>Verify that land application rates for septage treated to reduce solids, nutrients, or pollutants are determined based on the analysis of the treated material.</p> <p>Verify that, at least four analyses of treated liquid are required prior to receiving an adjusted land application rate.</p> <p>(NOTE: Additional samples shall be required for highly variable material.)</p> <p>Verify that each analysis includes a nitrogen panel, phosphorus, potassium, soluble salts, pH, and regulated metals except mercury, calcium, manganese, magnesium, iron, sulfur, boron and chlorine.</p> <p>Verify that, after an adjusted rate is approved, sampling is required every 60 days for the first 12 months of operation.</p> <p>Verify that, after the initial 12 months, wastes with consistent sample results are sampled quarterly.</p> <p>(NOTE: Land application rates for industrial or commercial septage, or commercial or industrial treatment plant septage shall be determined as specified unless testing determines that a lower rate is necessary due to other non-domestic pollutants.)</p>
<p>WA.105.7.NC. Applications at septage land application sites must meet management requirements (15A NCAC 13B.0838 (a)(18) through</p>	<p>Verify that septage is not land applied at a new septage land application site until a representative of the Division has inspected the site to determine compliance with these rules and consistency with the permit application and all permit conditions.</p>

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(22) and (f)) [Added March 2010].	<p>Verify that the site is managed in such a manner as to minimize soil erosion and surface water runoff.</p> <p>Verify that appropriate soil and water management practices are implemented and maintained in accordance with the Division-approved erosion and run-off control plan.</p> <p>Verify that all water control structures are maintained to control the run-off resulting from a 10-year storm.</p> <p>Verify that the approved nutrient management plans are followed.</p> <p>Verify that land application sites or portions of land application sites that do not follow the approved nutrient management plan are not used for land application until brought into compliance with the nutrient management plan.</p> <p>Verify that alternate plan for the storage or disposal of septage during periods when the permitted land application site is not available.</p> <p>Verify that a septage land application site permit holder or operator is responsible for the actions of any septage management firm that the permit holder or operator allows to use his land application site.</p>

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LAND APPLICATION OF SLUDGE WA.115. Notifications WA.115.1.NC. Septage land application sites must meet specific notification requirements (15A NCAC 13B.0843 (d)) [Citation Revised March 2010].	Verify that the Division is notified at least 30 days prior to final closure of a septage land application site in order to schedule a site inspection.

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<p>LAND APPLICATION OF SLUDGE</p> <p>WA.120. Monitoring</p> <p>WA.120.1.NC. Septage land application sites must meet specific monitoring requirements (15A NCAC 13B.0840) [Revised March 1998; Revised March 2010].</p>	<p>Verify that annual representative soil samples are taken from each field at the permitted site during the last quarter of each calendar year.</p> <p>Verify that soil samples are analyzed for cation exchange capacity, pH, phosphorus, potassium, calcium, manganese, magnesium, zinc, and copper.</p> <p>(NOTE: Analysis for other metals is required when zinc levels reach 30 lb/acre or copper levels reach 35 lb/acre.)</p> <p>Verify that sites permitted to receive septage, other than domestic septage, are sampled annually to determine compliance with 40 CFR 257.3 - 6.</p> <p>Verify that domestic treatment plant septage proposed to be land applied at a permitted septage land application site is sampled before the initial application, and annually thereafter, prior to being removed from a treatment facility for the following:</p> <ul style="list-style-type: none"> - metals addressed in 40 CFR 503.13, barium, and silver - total solids, pH, ammonia, nitrates, TKN, BOD, COD, total phosphorus, potassium, sodium, and magnesium - a complete Toxicity Characteristic Leaching Procedure or other appropriate sampling for organic chemicals, such as USEPA Test numbers 8240 or 8270, unless an examination of the industrial process and the material used indicate less extensive analysis is acceptable. <p>Verify that sample analyses are performed by a laboratory certified for waste analysis.</p>

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<p>LAND APPLICATION OF SLUDGE LAND APPLICATION OF SLUDGE</p> <p>WA.125. Recordkeeping and Reporting</p> <p>WA.125.1.NC. Septage land application permit holders must meet recordkeeping and reporting requirements (15A NCAC 13B.0838 (e)) [Revised March 1998; Revised March 2010].</p>	<p>Verify that permit holders of septage land application sites develop and maintain records and reports to demonstrate compliance with all requirements of section .800 and the permit requirements of each site.</p> <p>Verify that permit holders of sites receiving septage maintain a log that meets the requirements of 40 CFR 503.17 (b).</p> <p>Verify that all records and certifications required to be kept available for review during are available during any announced site inspections by the Division.</p> <p>Verify that, where more than one septage management firm has been authorized by the Division to discharge septage, a monthly report is submitted to the Division</p> <p>Verify that the monthly report for each discharge includes the date and quantity of each discharge, the type of septage discharged, and the name of the septage management firm discharging.</p> <p>Verify that all required test results for nutrients, metals, contaminants, and pathogens are maintained by the site operator or the preparer.</p>

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1998; Citation Revised March 2010].	<p>Verify that septage is transferred to and from a detention system in a safe and sanitary manner that prevents leaks or spills of septage.</p> <p>Verify that access roads or paths crossing or leading to the facility are posted "NO TRESPASSING."</p> <p>(NOTE: Lined lagoons may be permitted at sites where construction and use of a lagoon does not jeopardize public health or the environment.)</p> <p>Verify that septage detention and treatment facilities not located on a permitted septage land application site are located at least the minimum distance from the following:</p> <ul style="list-style-type: none"> - residence, place of business, or place of public assembly--100 ft - well or water supply spring--100 ft - surface waters--100 ft - property lines--50 ft - soil wetness--12 in. <p>(NOTE: Setbacks from residences and property lines may be in accordance with local zoning ordinances if located in areas zoned for industrial use.)</p> <p>Verify that septage is not stored in a detention system for more than 6 mo.</p> <p>Verify that septage is not stored or treated at a permitted septage treatment or detention facility until a representative of the Division has inspected the facility to determine compliance.</p>
WA.130.4.NC. [Deleted March 2010].	(NOTE: 15A NCAC 13B.0827 repealed; see WA.148.5.NC. and WA.148.6.NC.)
WA.130.5.NC. [Deleted March 2010].	(NOTE: 15A NCAC 13B.0822 repealed.)
WA.130.6.NC. A septage land application site must meet land use and site closure requirements (15A NCAC 13B.0843 (a), (b), (c), and (e)) [Citation Revised March 2010].	<p>Verify that nursery and horticultural products, trees, and other forest products, including, but not limited to, pine straw and pine bark, are not harvested or gathered for 30 days after septage application.</p> <p>Verify that public access is controlled in accordance with 40 CFR 503.32(c) of Subpart D.</p> <p>Verify that, prior to final closure, the soil pH of the site is raised to 6.5, unless the fertility requirements for crops to be grown in the following yr dictate less.</p>

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<p>WA.145.</p> <p>DISPOSAL OF SLUDGE</p> <p>WA.145.1.NC. Residual managements systems permitted by regulation must meet specific requirements (15A NCAC 2T.1101 and 2T.1103) [Added March 2007]</p>	<p>(NOTE: This checklist item applies to the treatment, storage, transportation, use, and disposal of residuals. Not regulated under this section is the treatment, storage, transportation, use, or disposal of:</p> <ul style="list-style-type: none"> - oil, grease, grit and screenings from wastewater treatment facilities - septage from wastewater treatment facilities - ash that is regulated under coal combustion projects management) - residuals that are regulated with animal waste management systems - residuals that are prepared for land application, used, or disposed of in a solid waste management facility permitted by the Division of Waste Management - residuals that are disposed of in an incinerator permitted by the Division of Air Quality - residuals that are transported out of state for treatment, storage, use, or disposal - residuals that meet the definition of a hazardous waste in accordance with 40 CFR 260.10 or that have a concentration of polychlorinated biphenyls equal to or greater than 50 milligrams per kilogram of total solids (i.e., dry weight basis).) <p>Verify that, if the residuals are taken to a solid waste facility, it is permitted by the Division of Waste Management to receive the residuals.</p> <p>Verify that, when residuals that are sold or given away in a bag or other container, are applied to the land, the following requirements are met:</p> <ul style="list-style-type: none"> - the residuals meet the pollutant limits in Appendix 12-11 - the residuals meet the pathogen requirements in Appendix 12-12 - the residuals meet the vector attraction reduction requirements in Appendix 12-13 - the land application activities are carried out according to the instructions provided in the informational sheet or bag or other container label. <p>Verify that, when bulk biological residuals are applied to the land, the following requirements are met:</p> <ul style="list-style-type: none"> - the residuals meet the pollutant limits in Appendix 12-11 - the residuals meet the pathogen requirements in Appendix 12-12 - the residuals meet the vector attraction reduction requirements in Appendix 12-13 - the land application activities meet all applicable conditions of Rule .1108(b)(1) and Rule .1109(b) of this Section. <p>Verify that, when residuals generated from the treatment of potable or fresh water or that are generated from the treatment of non-biological industrial wastewater with no domestic or municipal wastewater contributions are land applied, the</p>

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<p>WA.145.2.NC. Residual treatment and storage facilities must be permitted (15A NCAC 2T.1104) [Added March 2007]</p>	<p>following requirements are met:</p> <ul style="list-style-type: none"> - the residuals meet the pollutant limits in WA.148.38.NC. - the residuals meet the pathogen requirements in WA.148.39.NC. -the land application activities meet all applicable conditions in WA.148.41.NC. and WA.148.42.NC. <p>Verify that, when residuals are transported from the residuals generating source facility to other Division or Division of Waste Management facilities, they are approved to treat, store, use, or dispose the residuals.</p> <p>Verify that the permitted by regulation facility also complies with the general requirements for permits by regulation (see WA.148.3.NC.).</p> <p>Verify that new and expanding residual treatment and storage facilities have obtained a permit from the Division.</p> <p>Verify that new and expanding residuals treatment and storage facilities submit an application to the Division including:</p> <ul style="list-style-type: none"> - site plans - engineering design documents. <p>Verify that new and modified sources of residuals submit an application to the Division including:</p> <ul style="list-style-type: none"> - site maps - a complete analysis of the residuals - a sampling/monitoring plan. <p>Verify that new and expanding non-dedicated land application sites submit an application to the Division including:</p> <ul style="list-style-type: none"> - buffer maps - soils report - a project evaluation and a land application site management plan (if applicable) - unless the land application site is owned by the permittee, property ownership documentation consisting of a notarized landowner agreement. <p>Verify that new and expanding dedicated land application sites submit an application to the Division including:</p> <ul style="list-style-type: none"> - site plans - engineering design documents - soils report - a hydrogeologic description prepared by a licensed geologist, license soil scientist, or professional engineer

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<p>WA.145.3.NC. Bulk residuals must meet pollutant limits (15A NCAC 2T.1105) [Added March 2007].</p>	<ul style="list-style-type: none"> - for land application sites onto which bulk residuals are applied through fixed irrigation facilities or irrigation facilities fed through a fixed supply system only, a water balance - a project evaluation and a receiver site management plan (if applicable) - property ownership documentation. <p>Verify that new and expanding surface disposal units submit an application to the Division including:</p> <ul style="list-style-type: none"> - site plans - engineering design documents - soils report - a hydrogeologic description prepared by a licensed geologist, license soil scientist, or professional engineer - property ownership documentation. <p>Verify that bulk residuals or residuals that are sold or given away in a bag or other container are not applied to the land if the concentration of any pollutant in the residuals exceeds the ceiling concentration for that pollutant as listed in Appendix 12-11.</p> <p>Verify that bulk residuals are not applied to the land if the land application causes the exceedance of the cumulative pollutant loading rate for any pollutant as listed in Appendix 12-11.</p> <p>Verify that bulk residuals are not applied to a lawn, home garden, or public contact use site or residuals be sold or given away in a bag or other container for application to the land if the concentration of any pollutant in the residuals exceeds the concentration for that pollutant as listed in Appendix 12-11.</p> <p>(NOTE: Bulk residuals are exempt from this checklist item if all of the following criteria are met:</p> <ul style="list-style-type: none"> - the monthly average concentrations are less than the cumulative pollutant loading rate for any pollutant - the pathogen reduction requirements are met (see Appendix 12-12) - the vector attraction reduction requirements are met (see Appendix 12-13).) <p>Verify that bulk residuals are not applied to a lawn, home garden, or public contact use site or residuals be sold or given away in a bag or other container for application to the land if the concentration of any pollutant in the residuals exceeds the concentration for that pollutant as listed in Appendix 12-11.</p> <p>Verify that bulk residuals are not placed in a surface disposal unit if the concentration of any pollutant in the residuals exceeds the concentration for that pollutant as listed in Appendix 12-11.</p>

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<p>WA.145.4.NC. Bulk residuals must meet Pathogen Reduction Requirements (15A NCAC 2T.1106) [Added March 2007].</p>	<p>Verify that, when biological residuals are applied to the land or placed in a surface disposal unit, the Class A pathogen requirements are met when bulk biological residuals are applied to a lawn, home garden, or public contact use site or sold or given away in a bag or other container for application to the land.</p> <p>(NOTE: Biological residuals placed in a surface disposal unit are exempt from meeting the Class A or Class B pathogen requirements if biological residuals are covered with soil or other material at the end of each operating day.)</p> <p>(NOTE: For biological residuals to be classified as Class A or Class B with respect to pathogens, see Appendix 12-12.)</p>
<p>WA.145.5.NC. Bulk residuals must meet vector attraction reduction requirements (15A NCAC 2T.1107) [Added March 2007].</p>	<p>Verify that biological residuals are not applied to the land unless the requirements of one of the vector attraction reduction alternatives have been met. (See Appendix 12-13).</p> <p>Verify that biological residuals are not placed in a surface disposal unit unless one of the following vector attraction reduction alternatives have been met:</p> <ul style="list-style-type: none"> - any alternative stipulated in Appendix 12-13 - biological residuals are covered with soil or other material at the end of each operating day.
<p>WA.145.6.NC. Residuals treatment and storage facilities must meet setback requirements (15A NCAC 2T.1108) [Added March 2007]</p>	<p>Verify that the minimum setbacks (see Appendix 12-4) are met for the following:</p> <ul style="list-style-type: none"> - for residuals treatment and storage facilities - for land onto which bulk residuals are applied or stockpiled - for the construction and operation of surface disposal units.
<p>WA.145.7.NC. Residuals must meet specific Operation and Management Practices (15A NCAC 2T.1109) [Added March 2007]</p>	<p>Verify that, when residuals that are sold or given away in a bag or other container for application to the land, either a label is affixed to the bag or other container or an information sheet is provided to the person who receives the residuals.</p> <p>Verify that the label/information sheet contains the following information:</p> <ul style="list-style-type: none"> - the name and address of the person who prepared the residuals - a statement that land application of the residuals is prohibited except with the instructions on the label/sheet - that residuals are applied at agronomic rates and recommended rates for intended uses. <p>Verify that bulk residuals are not applied to the land under the following</p>

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	<p>conditions:</p> <ul style="list-style-type: none"> - if the requirements specified by 40 CFR 503.14(a) cannot be met - if the application causes prolonged nuisance conditions - if the land fails to assimilate the bulk residuals or the application causes the contravention of surface water or groundwater standards - if the land is flooded, frozen, or snow-covered or is otherwise in a condition such that runoff of the residuals would occur - within the 100-year flood elevation unless the bulk residuals are injected or incorporated within a 24-hour period following the residuals land application event - during precipitation events or within 24 hours following a rainfall event of 0.5 inches or greater in a 24-hour period; - if the slope of the land is greater than 10 percent when bulk liquid residuals are surface applied - if the slope of the land is greater than 18 percent when bulk liquid residuals are injected or incorporated - if the land does not have an established vegetative cover crop unless the bulk residuals are incorporated within a 24-hour period following the residuals land application event or injected - if the vertical separation of the seasonal high water table and the depth of residuals application is less than one foot - if the vertical separation of the depth to bedrock and the depth of residuals application is less than one foot - application exceeds agronomic rates except for dedicated sites where the applicant has specifically requested higher rates in an application. <p>Verify that for land onto which bulk residuals that cannot meet the classification as Class A with respect to pathogens, the following public access restrictions are met:</p> <ul style="list-style-type: none"> - public access to public contact sites is restricted for one calendar year after any residuals land application event - public access to land that is not a public contact site is restricted for 30 days after any residuals land application event - public access to land associated with a dedicated land application site is restricted continuously while the land is permitted for active use and for one calendar year after the final residuals land application event. <p>Verify that for land onto which bulk residuals that cannot meet the classification as Class A with respect to pathogens, the following harvesting and grazing restrictions are met:</p> <ul style="list-style-type: none"> - animals are not allowed to graze on land for 30 calendar days after any residuals land application event - food crops, feed crops, and fiber crops are not harvested for 30 calendar days after any residuals land application event - food crops with harvested parts that touch the residuals/soil mixture and are totally above the land surface are not harvested for 14 months after any residuals land application event

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REGULATORY REQUIREMENTS:	<p align="center">REGULATORY REQUIREMENTS: March 2010</p> <ul style="list-style-type: none"> - food crops with harvested parts below the surface of the land are not harvested for 20 months after any residuals land application event when the residuals remain on the land surface for 4 months or longer prior to incorporation into the soil - food crops with harvested parts below the surface of the land are not harvested for 38 months after any residuals land application event when the residuals remain on the land surface for less than 4 months prior to incorporation into the soil - turf grown on land where residuals are applied is not harvested for one calendar year after any residuals land application event. <p>Verify that, for new and expanding surface disposal units, the following conditions are met.</p> <ul style="list-style-type: none"> - surface disposal units are not located in a seismic impact zone unless designed to withstand the maximum recorded horizontal ground level acceleration - surface disposal units are not located less than 60 meters from a fault that has displacement in Holocene time - surface disposal units are not located within an unstable area - surface disposal units are not located within the 100-year floodplain - surface disposal units do not restrict base flood flow - the vertical separation of the seasonal high water table and the bottom of surface disposal units is not less than 3 feet - surface disposal units are provided with a liner system with a maximum hydraulic conductivity of 10⁻⁷ centimeters per second - if cake residuals are placed in the unit, a leachate collection system is required - if liquid residuals are placed in the unit, a decanting system and freeboard marker is required. <p>Verify that the following conditions are met while surface disposal units are permitted for active use and for three calendar years after closure:</p> <ul style="list-style-type: none"> - the requirements specified by 40 CFR 503.24(a) - do not cause prolonged nuisance conditions - do not cause the contravention of surface water or groundwater standards - runoff from a 24-hour 25-year storm event, decant water, and leachate (i.e., as applicable) is collected from surface disposal units - if biological residuals are placed in the surface disposal unit, the concentration of methane gas do not exceed 25 percent of the lower explosive limit for methane gas in any structure within the surface disposal unit boundary - if biological residuals are placed in the surface disposal unit, the concentration of methane gas do not exceed the lower explosive limit for methane gas at any property line of the surface disposal unit - public access to surface disposal units is restricted continuously - animals are not allowed to graze on surface disposal units - food crops, feed crops, and fiber crops are not harvested from surface disposal units.

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<p>WA.145.8.NC. Residuals management programs must have an operation and Maintenance Plan (15A NCAC 2T.1110) [Added March 2007]</p>	<p>Verify that following active use, surface disposal units are closed.</p> <p>Verify that permits for surface disposal units are maintained for a minimum of 3 years following successful closure.</p> <p>Verify that an operation and maintenance plan is maintained for all residuals management programs.</p> <p>Verify that the plan includes:</p> <ul style="list-style-type: none"> - description of the operation of the program and any associated facilities and equipment in sufficient detail to show what operations are necessary for the program to function and by whom the functions are to be conducted - description of anticipated maintenance of facilities and equipment that are associated with the program - provisions for safety measures including restriction of access to the site and equipment, as appropriate - spill control provisions including: <ul style="list-style-type: none"> - response to upsets and bypasses including control, containment, and remediation - contact information for program personnel, emergency responders, and regulatory agencies - detail procedures for sampling and monitoring to ensure that the program stays in compliance with this Section and any issued permit - for surface disposal units, detail procedures for post-closure care management.
<p>WA.145.9.NC. Residuals management must meet monitoring and reporting requirements (15A NCAC 2T.1111) [Added March 2007]</p>	<p>Verify that representative samples of residuals that are prepared for application to the land or placed in a surface disposal units are collected and analyzed.</p> <p>Verify that residuals applied to the land or placed in a surface disposal unit are monitored for pollutants limits (see WA.148.38.NC.) at the following frequencies:</p> <ul style="list-style-type: none"> - greater than zero but less than 290 metric tons per 365 day period: once per year - equal to or greater than 290 but less than 1,500 metric tons per 365 day period: once per quarter (four times per year) - equal to or greater than 1,500 but less than 15,000 Metric tons per 365 day period: once per 60 days (six times per year) - equal to or greater than 15,000 metric tons per 365 day period: once per month (12 times per year). <p>Verify that a report of all monitoring and reporting requirements as specified in the permit is submitted to the Division annually on or before March 1st of each</p>

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	<p>calendar year.</p> <p>Verify that all records are retained for a minimum of 5 years.</p>

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<p>WA.148.</p> <p>OTHER SEWAGE/ SLUDGE MANAGEMENT</p> <p>WA.148.1.NC. Permits are required for the management of septage (or any part of septage) or operation of a septage management firm (15A NCAC 13B.0832 (a) and 13B.0837 (h)) [Added March 2010].</p> <p>WA.148.2.NC. Septage management firms must meet recordkeeping requirements (15A NCAC 13B.0839) [Added March 2010].</p>	<p>Verify that no one manages septage, or any part of septage, or operates a Septage Management Firm without first obtaining a permit from the Division.</p> <p>Verify that persons who remove septage, and other waste materials or spent media from wastewater systems permitted by the Division of Environmental Health, under the authority of Article 11, Chapter 130A of the North Carolina General Statutes are permitted.</p> <p>Verify that persons who manage septage generated from properties which they own, lease or manage as part of a business, including but not limited to mobile homes, mobile home parks, restaurants, and other residential and commercial property are permitted.</p> <p>(NOTE: Initial septage land application site and detention and treatment facility permits are issued for a maximum of one year. Renewal permits shall be issued for five years if the facility has not had a major violation and records have been maintained in accordance with this Section.)</p> <p>(NOTE: Septage, or any part of septage, treated to meet the standard for Class A sewage sludge in accordance with the federal regulations for pathogen reduction and vector attraction reduction in 40 CFR Part 503, Subpart D, may be permitted by the Division for application to a public contact site, home lawns and gardens, or to be sold or given away in a bag or other container, provided it can be demonstrated that pollutant limits in 40 CFR 503.13 (b) (1) Table 3 are not exceeded. Persons who prepare the septage, and persons who derive material from the septage, shall comply with the applicable record keeping requirements in 40 CFR 503.17 (a) (1), (2), or (6).)</p> <p>Verify that all Class A sewage sludge treatment methods and facilities obtain a permit from the Division.</p> <p>Verify that all permit conditions are met.</p> <p>Verify that each permit holder maintains a log which includes at least the following information for each septage pumping event:</p> <ul style="list-style-type: none"> - date, type, quantity, and location of septage pumped - location of the discharge of the septage. <p>Verify that a septage management firm makes all records required in accordance with this Section or conditions of the permit available for inspection by a</p>

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<p>WA.148.3.NC. Portable sanitation and recreational vehicle waste must meet management requirements (15A NCAC 13B.0832 (b) and (c)) [Added March 2010].</p>	<p>representative of the Division at the time and place of an inspection of the firm's septage pumper truck(s) or upon request.</p> <p>(NOTE: Leaks or overflows of the septage storage tank at a mobile or modular office is considered illegal land application and is the responsibility of the office occupant and owner of the mobile or modular office.)</p> <p>Verify that persons who rent or lease portable toilet(s) or manage or dispose of waste from portable toilet(s), regardless of ownership of the toilet(s) are permitted to operate a septage management firm.</p> <p>Verify that persons who place a chemical or portable toilet for potential use are permitted as a septage management firm.</p> <p>Verify that domestic septage from a recreational vehicle is managed in accordance with Section .0800 or flows directly into a wastewater treatment system permitted by the Department of Environment and Natural Resources.</p> <p>(NOTE: Wastewater from recreational vehicles that are tied down, blocked up, or are not relocated on a regular basis, and are not connected to an approved wastewater system, shall be managed in accordance with Article 11, Chapter 130A of the NC General Statutes.)</p> <p>Verify that recreational vehicle dump stations that do not discharge directly to a wastewater treatment system permitted by the Department of Environment and Natural Resources are permitted as a septage detention and treatment facility.</p>
<p>WA.148.4.NC. Alternative septage management methods must meet required limitations (15A NCAC 13B.0832 (d)) [Added March 2010].</p>	<p>Verify that grease septage, or any part of grease septage, is not introduced or reintroduced into a grease trap, interceptor, separator, or other appurtenance used for the purpose of removing cooking oils, fats, grease, and food debris from the waste flow generated from food handling, preparation, and cleanup unless the Division has received written approval from the wastewater treatment plant operator or the onsite wastewater system permitting authority that reintroduction is acceptable.</p> <p>Verify that septage, or any part of septage, is not placed in containers at restaurants designated for yellow grease.</p> <p>Verify that septage, or any part of septage, is not disposed of in a municipal solid waste landfill unless the waste passes the paint filter test and the landfill receiving the waste has provided the Division written documentation that the specific material will be accepted.</p> <p>Verify that septage, or any part of septage, is not disposed of in a dumpster unless the waste passes the paint filter test, the landfill receiving the waste is a properly permitted municipal solid waste landfill, in accordance with 15A NCAC 13B .1600, and the landfill operator has provided the Division written documentation</p>

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<p>WA.148.5.NC. The transpiration of septage must meet specific requirements (15A NCAC 13B.0844 (a) and (d)) [Added March 2010].</p>	<p>that the specific material will be accepted.</p> <p>(NOTE: Septage, or any part of septage, managed through subsurface disposal shall be considered a treatment facility and shall require a permit.)</p> <p>Verify that facilities receiving septage, or any part of septage, for composting are permitted.</p> <p>Verify that all septage is transported in a safe, sanitary manner that prevents leaks and spills.</p> <p>Verify that all tanks are constructed of metal and permanently attached to the truck bed, unless otherwise approved by the Division.</p> <p>Verify that all valves are in proper working order and be completely closed during transportation.</p> <p>Verify that all access ports have proper fitting lids in good repair and are completely closed during transportation.</p> <p>Verify that portable toilet pump units that slide into pickup truck beds are bolted to the trucks in accordance with manufacturer specifications;</p> <p>Verify that boats used to pump or transport septage are United States Coast Guard approved or engineered plans are available indicating that the specific craft is stable in the water when fully loaded.</p> <p>Verify that tanks that are mounted on trailers for the pumping or transportation of septage meet all applicable state and federal requirements for highway use.</p> <p>Verify that septage discharged at a wastewater treatment plant or any part of the collection system for that plant is handled in accordance with the plant rules and policies.</p>
<p>WA.148.6.NC. Trucks used for septage transportation must meet specific requirements (15A NCAC 13B.0844 (b), (c), (e), and (f)) [Added March 2010].</p>	<p>Verify that all permitted septage management firms display decals or lettering on each side of every pumper vehicle operated by the firm.</p> <p>Verify that the decals or lettering include the name, address (town name), phone number, and septage management firm permit number.</p> <p>Verify that all decals or lettering on the pumper vehicle is no less than three inches in height and plainly visible is permanently attached (i.e., no removable signs).</p> <p>(NOTE: Applicants for septage management firm permits which were not permitted in the previous calendar year shall have each pump truck inspected prior</p>

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	<p>to the Division's issuance of a permit.)</p> <p>Verify that all vehicles used in the transportation of septage, including spare vehicles and tankers, meet the requirements of section .0800.</p> <p>(NOTE: Vehicles used in the transportation of septage that are listed on an approved septage management firm permit application may remain loaded or partially loaded on land owned by the septage management firm for up to seven days without obtaining a permit for a detention or treatment facility.)</p>

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<p>WA.150.</p> <p>WATERSHED PROTECTION PROGRAMS/ RECHARGE PROGRAMS</p> <p>WA.150.1.NC. Development projects in designated small surface water supply watersheds must meet specific requirements before receiving an area of environmental concern (AEC) permit (15A NCAC 7H.0405).</p> <p>WA.150.2.NC. Development projects in public water supply well fields must meet specific requirements before receiving an AEC permit (15A NCAC 7H.0406).</p>	<p>(NOTE: Designated small surface water supply watersheds are catchment areas situated entirely within the coastal area which contain a water body classified as A-II by the Environmental Management Commission. This means the maximum beneficial use of these bodies of water is to serve as public water supply areas. The CRC has designated the following small surface water supply watersheds:</p> <ul style="list-style-type: none"> - the fresh pond between Kill Devil Hills and Nags Head on Bodie Island and adjacent catchment area - the Toomers Creek watershed.) <p>Verify that the development project meets the following minimum standards:</p> <ul style="list-style-type: none"> - ground absorption sewage disposal systems are located a minimum of 100 ft from A-II surface waters - development requiring a national pollution discharge elimination system (NPDES) permit are denied an AEC permit until the NPDES permit is secured - land-disturbing activities (land clearing, grading, and surfacing) are in compliance with the mandatory standards of the North Carolina <i>Sedimentation Pollution Control Act</i> of 1973 in GS 113A-57. <p>Verify that, to adequately protect the fresh pond between Kill Devil Hills and Nags Head on Bodie Island, the construction of septic tanks and other sources of pollution within the limits of the cone of depression meet the following criteria:</p> <ul style="list-style-type: none"> - sewers, septic tanks, nitrification fields, or other possible sources of pollution are not constructed within 500 ft, horizontal distance, of the edge of the pond - between the distances of 500 ft and 1200 ft from the edge of the pond, construction of septic tank systems is limited to one single septic tank system serving a single family residence not to exceed 4 bedrooms or its equivalent volume of sewage, on a lot or tract of land not less than 40,000 ft². <p>(NOTE: Public water supply well fields are areas of well-drained sands that extend downward from the surface into the shallow groundwater table that supplies the public with potable water. These surficial well fields are confined to the following areas:</p> <ul style="list-style-type: none"> - Cape Hatteras Well Field, located south of N.C. 12 on Hatteras Island between Frisco and Buxton. The AEC is bounded by a line located 1000 ft from the centerlines of 3 tracts. The first tract is identified as "well field" on maps entitled "Cape Hatteras Wellfield Area of Environmental Concern"

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<p>WA.150.3.NC. Water supply systems supplying water from an unfiltered public water system must take specific steps to protect the watershed area of their water supply (15A NCAC 18C.1101 through 18C.1104, 18C.1106, and 18C.1107) [Added March 1998; Revised February 1999].</p>	<p>approved by the Coastal Resources Commission on 24 July 1987, and extends approximately 12,000 ft west from Water Association Road. The second tract is conterminous with the first tract, is identified as "future well field" on said maps and extends approximately 8000 ft to the east of Water Association Road. The third tract is identified as "future well field" on said maps and extends approximately 6200 ft along the National Park Service boundary east of Water Association Road</p> <ul style="list-style-type: none"> - Elizabeth City Well Field, located at Elizabeth City in Pasquotank County, a shallow well field in the southeastern section of the Dismal Swamp at the end of SR 1309 approximately 1/2 mi west of the corporate limits of Elizabeth City. The well field begins at SR 1306 and extends west into the Dismal Swamp. The area to be designated is bounded to the south by the Southern Railway until it intersects SR 1144, to the east by SR 1306, 1309, and 1333, and to the north and west by the Dismal Swamp.) <p>Verify that development within these AECs is consistent with the following minimum standards:</p> <ul style="list-style-type: none"> - no ground absorption sewage disposal or subsurface pollution injection systems are placed within the designated AEC boundary, except to replace systems existing as of 24 July 1987 - development does not significantly limit the quality or quantity of the public water supply or the amount of rechargeable water - the development does not cause salt water intrusion or result in the discharge of toxic and/or soluble contaminants into standing or groundwater. <p>Verify that, within the watershed no dwelling house, pasture, hog lot, cattle or horse barn, or other areas where domestic animals are confined or permitted, and no parks, campgrounds, or other places of public assembly are permitted within the watershed area.</p> <p>Verify that no persons, other than a duly authorized representative of the water supply system, the local health department, the Department, U.S. Park Service, or U.S. Forest Service, or a game warden, state forester, or law enforcement officer, is permitted within the area at any time and for any purpose, unless the Department determines that the proposed activity does not adversely affect the quality of the water.</p> <p>Verify that hunting, fishing, or hiking is not permitted within the watershed area.</p> <p>Verify that no timbering, lumbering, construction, or reforestation operations are permitted on the watershed unless the Department determines that the project will provide for the sanitary and physical protection of the water supply.</p> <p>Verify that the system inspects the watershed at least quarterly to assure that the area is at all times maintained so as to promote and ensure the sanitary and physical protection of the water supply.</p>

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<p>WA.150.4.NC. Water supply systems supplying water from a filtered public water system must take specific steps to protect the watershed area of their water supply (15A NCAC 18C.1201 through 18C.1204, 18C.1207 through 18C.1210, 18C.1212 through 18C.1214.) [Added March 1998].</p>	<p>Verify that a copy of the watershed inspection report is submitted to the Public Water Supply Section within 10 days after completion of the inspection.</p> <p>Verify that signs advising the public of watershed boundaries and prohibiting trespassing by all unauthorized persons are posted and maintained at the water works intake, along the boundaries, and at entrances and accesses throughout the watershed area.</p> <p>(NOTE: The following 2 paragraphs were added from WQ.35.2.NC.; February 1999.)</p> <p>Verify that the carcass of any dead animal found within the area is buried with a covering of at least 3 ft of earth, or the carcass is burned or removed from the watershed and buried.</p> <p>Verify that in no case are dead animals placed in the reservoir or the tributaries of an unfiltered community water system.</p> <p>Verify that no recreational activities are permitted on a class I or class II reservoir without a resolution by the Commission or approval by the Department.</p> <p>Verify that only those recreational activities specifically authorized in the resolution are allowed, and no recreational activities are permitted within 50 yd of any public water system intake.</p> <p>Verify that parks, or other places of resort, established and maintained on a watershed for use and entertainment of the public, are provided with sanitary facilities for the collection of garbage and disposal of sewage.</p> <p>Verify that such facilities do not cause deterioration of water quality.</p> <p>Verify that persons in charge of such facilities maintain them at all times in order to prevent pollution of the public water system.</p> <p>Verify that fishing is not allowed on any Class I or Class II public water supply reservoir without a resolution granting permission by the Commission for Health Services.</p> <p>Verify that the watering, washing, or wallowing of any horses, mules, cattle, or domestic animals is not permitted in any class I or class II reservoir.</p> <p>(NOTE: Domestic animals may be permitted within 50 ft of normal pool elevation if the animal is under direct supervision and the activity is regulated to ensure that water quality is not adversely affected.)</p> <p>Verify that precautions are taken, on the watershed in the vicinity of Class I and Class II reservoirs and at water intakes located on unpounded streams, to</p>

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	<p>control drainage of wastes from animal and poultry pens or lots into such sources.</p> <p>Verify that no treated or untreated domestic sewage, treated or untreated industrial waste, or byproducts are stored on the watershed of or discharged into any public water supply reservoir or stream tributary to that reservoir whose waters are classified as WS-I.</p> <p>Verify that no untreated domestic sewage or industrial waste byproducts are discharged into any public water supply reservoir or stream classified as WS-II, WS-III, WS-IV, or WS-V.</p> <p>Verify that no hazardous waste, industrial byproducts, or treated or untreated domestic sewage is stored in the watershed of a Class I or Class II water supply reservoir.</p> <p>Verify that no hazardous waste or industrial byproducts are stored in the watershed of a WS-II, WS-III, WS-IV, or WS-V stream unless precautions are taken to prevent its being spilled into or otherwise entering the raw water supply.</p> <p>Verify that any residence, place of business, or public assembly located on a watershed is provided with a sanitary means of sewage disposal.</p> <p>Verify that the carcass of any dead animal found within the watershed is buried with a covering of at least 3 ft of earth or the carcass is burned or removed from the watershed and buried.</p> <p>Verify that in no case are dead animals placed in the reservoir.</p> <p>Verify that no burial ground is established on any watershed within 1500 ft upstream from a public water supply intake on an unimpounded stream or within 300 ft of any Class I or Class II reservoir.</p> <p>Verify that any person who intends to dispose of, or store, any substance that may adversely affect the quality of the water to the point of rendering it unsuitable as a source for a public water system, notifies the Division prior to disposal or storage.</p> <p>Verify that the notification is in writing and lists any substances to be disposed of or stored.</p> <p>Verify that the Department is informed of any activities that may endanger water quality.</p>

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<p>WA.155.</p> <p>WASTEWATER REUSE</p> <p>WA.155.1.NC. Wastewater surface irrigation systems must be permitted (15A NCAC 2T.0501 and 2T.0504) [Revised March 2007].</p> <p>WA.155.2.NC. Wastewater surface irrigation systems must meet specific design requirements (15A NCAC 2T.0505) [Added March 2007].</p>	<p>(NOTE: This checklist item applies to all surface irrigation of wastewater systems. Surface irrigation of wastewater includes spray irrigation, drip irrigation, and any other application of wastewater to the ground surface.)</p> <p>Verify that a permit application is submitted for all new and expanding wastewater irrigation systems including:</p> <ul style="list-style-type: none"> - a soils report - engineering design documents - site plans - a hydrogeologic description - proper ownership documentation - a complete chemical analysis of the typical wastewater to be discharged - a project evaluation and a receiver site agronomic management plan - a residual management plan - a water balance. <p>(NOTE: See WA.155.1.NC. for applicability.)</p> <p>Verify that, for new and expanding municipal, domestic and commercial facilities, the minimum degree of treatment meets a monthly average of:</p> <ul style="list-style-type: none"> - BOD5 = 30 mg/L - total suspended solids (TSS) = 30 mg - ammonia (NH3) = 15 mg/L - fecal coliforms = 200 colonies/100 ml. <p>Verify that, for expanding municipal facilities, except those permitted as new with lagoon treatment systems, the minimum degree of treatment meets a monthly average:</p> <ul style="list-style-type: none"> - BOD5 = 60 mg/L - total suspended solids (TSS) = 90 mg - fecal coliforms = 200 colonies/100 ml. <p>Verify that all wastes are applied at agronomic rates unless predictive calculations are provided that document State groundwater standards will be protected.</p> <p>Verify that all treatment/storage lagoons/ponds have at least two feet of freeboard.</p> <p>Verify that waste, including treated waste, is not placed directly into, or in contact with, GA classified groundwater unless such placement will not result in a</p>

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	<p>contravention of GA groundwater standard.</p> <p>Verify that treatment works and disposal systems utilizing earthen basins, lagoons, ponds or trenches, excluding holding ponds containing non-industrial treated effluent prior to spray irrigation, for treatment, storage or disposal have either :</p> <ul style="list-style-type: none"> - a liner of natural material at least one foot in thickness and having a hydraulic conductivity of no greater than 1×10^{-6} centimeters per second when compacted - a synthetic liner of sufficient thickness to exhibit structural integrity and an effective hydraulic conductivity no greater than that of the natural material liner. <p>Verify that the bottoms of earthen impoundments, trenches or other similar excavations are at least 4 feet above the bedrock surface, except that the bottom of excavations which are less than 4 feet above bedrock have a liner with a hydraulic conductivity no greater than 1×10^{-7} centimeters per second.</p> <p>Verify that impoundments, trenches or other excavations made for the purpose of storing or treating waste are not excavated into bedrock unless the placement of waste into such excavations will not result in a contravention of surface water or groundwater standards.</p> <p>Verify that flow equalization of at least 25 percent of the facilities permitted hydraulic capacity is provided for all seasonal or resort facilities and all other facilities with fluctuations in influent flow which may adversely affect the performance of the system.</p> <p>Verify that by-pass and overflow lines are prohibited.</p> <p>Verify that multiple pumps are provided if pumps are used.</p> <p>Verify that power reliability is provided consisting of:</p> <ul style="list-style-type: none"> - automatically activated standby power supply onsite, capable of powering all essential treatment units under design conditions - approval by the Director that the facility: <ul style="list-style-type: none"> - serves a private water distribution system which has automatic shut-off at power failure and no elevated water storage tanks - has sufficient storage capacity that no potential for overflow exists - can tolerate septic wastewater due to prolonged detention. <p>Verify that there is a water-tight seal on all treatment/storage units or minimum of two feet protection from 100-year flood.</p> <p>Verify that irrigation system design does not exceed the recommended precipitation rates in the soils report</p> <p>Verify that a minimum of 30 days of residual storage is provided.</p>

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<p>WA.155.3.NC. Wastewater surface irrigation systems must meet setback requirements (15A NCAC 2T.0506) [Added March 2007].</p> <p>WA.155.4.NC. Wastewater surface irrigation systems must have an operation and maintenance plan (15A NCAC 2T.0507) [Added March 2007].</p> <p>WA.155.5.NC. Wastewater surface irrigation systems</p>	<p>Verify that disposal areas are designed to maintain a one-foot vertical separation between the seasonal high water table and the ground surface.</p> <p>Verify that the public is prohibited access to the wetted irrigation area and treatment facilities.</p> <p>Verify that influent pump stations meet the sewer minimum design criteria.</p> <p>Verify that septic tanks adhere to the standards listed in WA.100.1.NC. through WA.100.11.NC.</p> <p>Verify that the irrigation system is provided with a flow meter to allow accurate determination of the volume of treated wastewater applied to each field.</p> <p>(NOTE: See WA.155.1.NC. for applicability.)</p> <p>Verify that if the wastewater irrigation system meets the effluent standards listed in WA.148.21.CCHNAGE the system complies with the setbacks requirement listed in Appendix 12-4 for property lines and the compliance boundary is at the irrigation area boundary.</p> <p>Verify that setback waivers are written, notarized, signed by all parties involved and recorded with the County Register of Deeds.</p> <p>(NOTE: See WA.155.1.NC. for applicability.)</p> <p>Verify that an operation and maintenance plan is maintained for all wastewater surface irrigation systems.</p> <p>Verify that the plan does the following:</p> <ul style="list-style-type: none"> - describe the operation of the system in sufficient detail to show what operations are necessary for the system to function and by whom the functions are to be conducted - describe anticipated maintenance of the system - include provisions for safety measures including restriction of access to the site and equipment, as appropriate -include spill control provisions: <ul style="list-style-type: none"> - response to upsets and bypasses including control, containment, and remediation - contact information for plant personnel, emergency responders, and regulatory agencies. <p>(NOTE: See WA.155.1.NC. for applicability.)</p>

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<p>must have a residuals management plan (15A NCAC 2T.0508) [Added March 2007].</p>	<p>Verify that a residuals management plan is maintained for all wastewater irrigation systems that generate residuals.</p> <p>Verify that the plan includes the following:</p> <ul style="list-style-type: none"> - a detailed explanation as to how the residuals will be collected, handled, processed, stored and disposed - an evaluation of the residuals storage requirements for the treatment facility based upon the maximum anticipated residuals production rate and ability to remove residuals - a permit for residuals utilization, a written commitment to the Permittee of a Department approved residuals disposal/utilization program accepting the residuals which demonstrates that the approved program has adequate capacity to accept the residuals - if oil, grease, grit, or screenings removal and collection is a designed unit process, a detailed explanation as to how the oil/grease will be collected, handled, processed, stored and disposed.
<p>WA.155.6.NC. High-rate infiltration facilities must meet design criteria (15A NCAC 2T.0701 and 2T.0704) [Added March 2007].</p>	<p>(NOTE: This checklist item applies to all new and expanding high Rate infiltration facilities.)</p> <p>Verify that a permit application is submitted for all new and expanding High-rate infiltration facilities s including:</p> <ul style="list-style-type: none"> - a soils report - engineering design documents - site plans - a hydrogeologic description - property ownership documentation - a complete chemical analysis of the typical wastewater to be discharged - a project evaluation and a receiver site agronomic management plan - a residual management plan - a water balance.
<p>WA.155.7.NC. High-rate infiltration facilities must meet design criteria (15A NCAC 2T.0705) [Added March 2007].</p>	<p>(NOTE: See WA.155.6.NC. for applicability.)</p> <p>Verify that the degree of treatment for domestic and commercial operations is based on a monthly average:</p> <ul style="list-style-type: none"> - 5-day Biochemical Oxygen Demand (BOD5) = 10 mg/L - total suspended solids (TSS) = 15 mg/L - ammonia nitrogen (NH3-N) = 4 mg/L - fecal coliforms = 14 per 100 mL - nitrate nitrogen (NO3-N) = 10 mg/L.

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	<p>Verify that all treatment/storage lagoons/ponds have at least 2 feet of freeboard.</p> <p>Verify that waste, including treated waste, is not placed directly into, or in contact with, GA classified groundwater unless the placement will not result in a contravention of GA groundwater standards.</p> <p>Verify that treatment works and disposal systems utilizing earthen basins, lagoons, ponds or trenches, excluding holding ponds containing non-industrial treated effluent prior to spray irrigation, for treatment, storage or disposal have either:</p> <ul style="list-style-type: none"> - a liner of natural material at least one foot in thickness and having a hydraulic conductivity of no greater than 1×10^{-6} centimeters per second when compacted - a synthetic liner of sufficient thickness to exhibit structural integrity and an effective hydraulic conductivity no greater than that of the natural material liner. <p>Verify that the bottoms of earthen impoundments, trenches or other similar excavations are at least 4 feet above the bedrock surface, except that the bottom of excavations which are less than 4 feet above bedrock have a liner with a hydraulic conductivity no greater than 1×10^{-7} centimeters per second.</p> <p>Verify that impoundments, trenches or other excavations made for the purpose of storing or treating waste are not excavated into bedrock unless the placement of waste into the excavations will not result in a contravention of surface water or groundwater standards.</p> <p>Verify that flow equalization of at least 25 percent of the facilities permitted hydraulic capacity is provided for all seasonal or resort facilities and all other facilities with fluctuations in influent flow which may adversely affect the performance of the system.</p> <p>Verify that by-pass and overflow lines are prohibited.</p> <p>Verify that multiple pumps are provided if pumps are used.</p> <p>Verify that power reliability is provided consisting of:</p> <ul style="list-style-type: none"> - automatically activated standby power supply onsite, capable of powering all essential treatment units under design conditions - approval by the Director that the facility: <ul style="list-style-type: none"> - serves a private water distribution system which has automatic shut-off at power failure and no elevated water storage tanks - has sufficient storage capacity that no potential for overflow exists, and - can tolerate septic wastewater due to prolonged detention. <p>Verify that a water-tight seal on all treatment/storage units or minimum of 2 feet protection from 100-year flood is provided.</p> <p>Verify that irrigation system design does not exceed the recommended</p>

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<p>WA.155.8.NC. High-rate infiltration facilities must meet setback requirements (15A NCAC 2T.0706) [Added March 2007].</p> <p>WA.155.9.NC. High-rate infiltration facilities must have an operation and maintenance plan (15A NCAC 2T.0707) [Added March 2007].</p> <p>WA.155.10.NC. High-rate infiltration facilities must have a residuals management</p>	<p>precipitation rates in the soils report.</p> <p>Verify that a minimum of 30 days of residuals storage is provided.</p> <p>Verify that disposal areas are designed to maintain a one-foot vertical separation between the seasonal high water table and the ground surface.</p> <p>Verify that the public is prohibited access to the wetted disposal area and treatment facilities.</p> <p>Verify that influent pump stations meet the sewer minimum design criteria as provided in Section .0300 of this Subchapter.</p> <p>Verify that Septic tanks adhere to 15A NCAC 18A.1900 (see WA.100.NC.).</p> <p>(NOTE: See WA.155.6.NC. for applicability.)</p> <p>Verify that the setbacks for infiltration units (Appendix 12-4) are met.</p> <p>Verify that setback waivers are written, notarized, signed by all parties involved and recorded with the County Register of Deeds.</p> <p>(NOTE: See WA.155.6.NC. for applicability.)</p> <p>Verify that high-rate infiltration facilities maintain an operation and maintenance plan.</p> <p>Verify that the plan does the following:</p> <ul style="list-style-type: none"> - describes the operation of the system in sufficient detail to show what operations are necessary for the system to function and by whom the functions are to be conducted - describes anticipated maintenance of the system - includes provisions for safety measures including restriction of access to the site and equipment, as appropriate - includes spill control provisions including: <ul style="list-style-type: none"> -response to upsets and bypasses including control, containment, and remediation - contact information for plant personnel, emergency responders, and regulatory agencies. <p>(NOTE: See WA.155.6.NC. for applicability.)</p> <p>Verify that high-rate infiltration facilities maintain a residuals management plan</p>

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<p>plan (15A NCAC 2T.0708) [Added March 2007].</p>	<p>for all systems that generate residuals.</p> <p>Verify that the plan includes the following:</p> <ul style="list-style-type: none"> - a detailed explanation as to how the residuals will be collected, handled, processed, stored and disposed of - an evaluation of the residuals storage requirements for the treatment facility based upon the maximum anticipated residuals production rate and ability to remove residuals - a permit for residuals utilization, a written commitment to the Permittee of a Department approved residuals disposal/utilization program a - if oil, grease, grit, or screenings removal and collection is a designed unit process, a detailed explanation as to how the oil/grease will be collected, handled, processed, stored and disposed.
<p>WA.155.11.NC. Reclaimed water systems that are permitted by regulation must meet specific requirements (15A NCAC 2T.0901 and 2T.0903) [Added March 2007].</p>	<p>(NOTE: This checklist item applies to reclaimed water systems; the utilization of tertiary treated wastewater effluent, used in a beneficial manner and for the purpose of conservation of the states water resources by reducing the use of a water resource (potable water, surface water, groundwater). The disposal of treated wastewater effluent that does not serve in place of the use of a water resource. Requirements for closed-loop recycle systems are listed in WA.148.30.NC. through WA.148.35.NCCHANGE.)</p> <p>Verify that overflow from elevated reclaimed water storage facilities where no viable alternative exists and all possible measures are taken to reduce the risk of overflow.</p> <p>Verify that any de minimus runoff from reclaimed water used during fire fighting or extinguishing, dust control, soil compaction for construction purposes, street sweeping, overspray on yard inlets, overspray on golf cart paths, or vehicle washing provided the use is approved in a permit.</p> <p>Verify that rehabilitation, repair, or replacement of reclaimed water lines in kind (i.e., size) with the same horizontal and vertical alignment.</p> <p>Verify that the permitted by regulation facility also complies with the general requirements for permits by regulation (see WA.148.3.NC.).</p>
<p>WA.155.12.NC. Conjunctive and non-conjunctive reclaimed water systems must be permitted (15A NCAC 2T.0904 and 2T.0905) [Added March 2007].</p>	<p>Verify that conjunctive and non-conjunctive are permitted.</p> <p>Verify that a permit application is submitted for all new and expanding conjunctive systems including:</p> <ul style="list-style-type: none"> - a soils report - engineering design documents - site plans

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<p>WA.155.13.NC. Permitted reclaimed water systems must meet parameter limits (15A NCAC 2T.0906) [Added March 2007].</p>	<ul style="list-style-type: none"> - property ownership documentation - a complete chemical analysis of the typical wastewater to be discharged - a project evaluation and a receiver site agronomic management plan. <p>Verify that a permit application is submitted for all new and expanding non-conjunctive systems including:</p> <ul style="list-style-type: none"> - a soils report - engineering design documents - site plans - property ownership documentation - a complete chemical analysis of the typical wastewater to be discharged - a project evaluation and a receiver site agronomic management plan - a residual management plan - a water balance. <p>Verify that the reclaimed water treatment process is documented to produce a tertiary quality effluent (filtered or equivalent) prior to storage, distribution, or irrigation that meets the parameter limits listed below:</p> <ul style="list-style-type: none"> - BOD5 <ul style="list-style-type: none"> - a monthly average BOD5 of less than or equal to 10 mg/l - a daily maximum BOD5 of less than or equal to 15 mg/l - TSS <ul style="list-style-type: none"> - a monthly average TSS of less than or equal to 5 mg/l - a daily maximum TSS of less than or equal to 10 mg/l -NH3 <ul style="list-style-type: none"> - a monthly average NH3 of less than or equal to 4 mg/l - a daily maximum NH3 of less than or equal to 6 mg/l - fecal coliform <ul style="list-style-type: none"> - a monthly geometric mean fecal coliform level of less than or equal to 14/100 ml - a daily maximum fecal coliform of less than or equal to 25/100 ml - a maximum turbidity of 10 NTUs. <p>(NOTE: Reclaimed water produced by industrial facilities is not required to meet the above criteria if the reclaimed water is used in the industry's process and the area of use has no public access.)</p>
<p>WA.155.14.NC. Permitted conjunctive wastewater treatment facilities must meet design requirements (15A NCAC 2T.0907) [Added March 2007].</p>	<p>(NOTE: This checklist item applies to all new and expanding conjunctive wastewater treatment facilities.)</p> <p>Verify that continuous on-line monitoring and recording for turbidity or particle count and flow is provided prior to storage, distribution or irrigation.</p> <p>Verify that effluent from the treatment facility is not discharged to the storage,</p>

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WA.155.15.NC. Permitted non-conjunctive wastewater treatment facilities must meet design requirements (15A NCAC 2T.0908) [Added March 2007].	<p>distribution or irrigation system if either the turbidity exceeds 10 NTU or if the permitted fecal coliform levels cannot be met.</p> <p>Verify that the facility has the ability to utilize alternate wastewater management options when the effluent quality is not sufficient.</p> <p>Verify that an automatically activated standby power source or other means to prevent improperly treated wastewater from entering the storage, distribution or irrigation system is provided.</p> <p>Verify that a certified operator of a grade equivalent or greater than the facility classification is on call 24 hours/day.</p> <p>(NOTE: No storage facilities are required as long as it can be demonstrated that other permitted means of disposal are available if the reclaimed water cannot be completely utilized.)</p> <p>Verify that irrigation system design does not exceed the recommended precipitation rates in the soils report prepared during permit application.</p>
	<p>(NOTE: This checklist item applies to all new and expanding non-conjunctive wastewater treatment facilities.)</p> <p>Verify that aerated flow equalization facilities are provided with a capacity based upon either a representative diurnal hydrograph or at least 25 percent of the daily system design flow.</p> <p>Verify that dual facilities are provided for all essential treatment units.</p> <p>Verify that continuous on-line monitoring and recording for turbidity or particle count and flow are provided prior to storage, distribution, or irrigation.</p> <p>Verify that effluent from the treatment facility is discharged to a 5-day side-stream detention pond if either the turbidity exceeds 10 NTU or if the permitted fecal coliform levels cannot be met.</p> <p>Verify that the facility has the ability to return the effluent in the 5-day side-stream detention pond back to the head of the treatment facility.</p> <p>Verify that there is no public access to the wastewater treatment facility or the 5-day side-stream detention pond.</p> <p>Verify that the storage basin has either:</p> <ul style="list-style-type: none"> - a liner of natural material at least one foot in thickness and having a hydraulic conductivity of no greater than 1×10^{-6} centimeters per second when compacted - a synthetic liner of sufficient thickness to exhibit structural integrity and an

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<p>WA.155.16.NC. Permitted reclaimed waste distribution lines must meet design requirements (15A NCAC 2T.0909) [Added March 2007].</p>	<p>effective hydraulic conductivity no greater than that required of the natural material liner.</p> <p>Verify that automatically activated standby power supply onsite, capable of powering all essential treatment units under design conditions is provided.</p> <p>Verify that there is a certified operator of a grade equivalent or greater than the facility classification is on call 24 hours/day.</p> <p>Verify that by-pass and overflow lines are prohibited.</p> <p>Verify that multiple pumps are provided if pumps are used.</p> <p>Verify that a water-tight seal on all treatment/storage units or minimum of 2 feet protection from 100-year flood is provided.</p> <p>Verify that irrigation system design do not exceed the recommended precipitation rates in the soils report.</p> <p>Verify that a minimum of 30 days of residual storage is provided.</p> <p>Verify that disposal areas are designed to maintain a one-foot vertical separation between the seasonal high water table and the ground surface.</p> <p>Verify that influent pump stations meet the sewer minimum design criteria as provided in Section .0300 of this Subchapter.</p> <p>Verify that all reclaimed water valves, storage facilities and outlets are tagged or labeled to warn the public or employees that the water is not intended for drinking.</p> <p>Verify that all reclaimed water piping, valves, outlets and other appurtenances are color-coded, taped, or otherwise marked to identify the source of the water as being reclaimed water.</p> <p>Verify that existing underground distribution systems retrofitted for the purpose of utilizing reclaimed water is taped or otherwise identified.</p> <p>Verify that all reclaimed water valves and outlets are of a type, or secured in a manner, that permits operation by authorized personnel only.</p> <p>Verify that hose bibs are located in locked, below grade vaults that are labeled as being of nonpotable quality.</p> <p>(NOTE: As an alternative to the use of locked vaults with standard hose bib services, hose bibs which can only be operated by a tool may be placed above ground and labeled as nonpotable water.)</p>

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<p>WA.155.17.NC. Utilization of water from permitted reclaimed water systems must meet specific requirements (15A NCAC 2T.0910) [Added March 2007].</p>	<p>Verify that there are no direct cross-connections between the reclaimed water and potable water systems.</p> <p>Verify that, where both reclaimed water and potable water are supplied to a reclaimed water use area, a reduced pressure principle backflow prevention device or an approved air gap separation is installed at the potable water service connection to the use area.</p> <p>Verify that, where potable water is used to supplement a reclaimed water system, there is an air gap separation, approved and regularly inspected by the potable water supplier, between the potable water and reclaimed water systems.</p> <p>(NOTE: Irrigation system piping is considered part of the distribution system for the purposes of this Rule.)</p> <p>Verify that reclaimed water distribution lines are located 10 feet horizontally from and 18 inches below any water line where practicable.</p> <p>Verify that reclaimed water distribution lines are not less than 100 feet from a well unless the piping and integrity testing procedures meet water main standards, but no case are they less than 25 feet from a private well or 50 feet from a public well.</p> <p>Verify that reclaimed water distribution lines meet the separation distances to sewer lines (see Appendix 12-14).</p> <p>Verify that reclaimed water for land application to areas intended to be accessible to the public such as residential lawns, golf courses, cemeteries, parks, school grounds, industrial or commercial site grounds, landscape areas, highway medians, roadways and other similar areas meet the following criteria:</p> <ul style="list-style-type: none"> - notification is provided to inform the public of the use of reclaimed water (Non Potable Water) and that the reclaimed water is not intended for drinking - the generator of the reclaimed water develops and maintains a program of record keeping for distribution of reclaimed water - the generator of the reclaimed water develops and maintains a program of education and approval for all use of reclaimed wastewater on property not owned by the generator - the generator of the reclaimed water develops and maintains a program of routine review and inspection of all use of reclaimed water not on property owned by the generator. <p>Verify that the compliance boundary and the review boundary for groundwater are established at the irrigation area boundaries.</p> <p>Verify that land application of effluents is on property controlled by the generator unless a contractual agreement is provided.</p>

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<p>WA.155.18.NC. Bulk distribution of permitted reclaimed water must meet specific requirements (15A NCAC 2T.0911) [Added March 2007].</p>	<p>Verify that reclaimed water used for purposes such as industrial process water or cooling water, aesthetic purposes such as decorative ponds or fountains, fire fighting or extinguishing, dust control, soil compaction for construction purposes, street sweeping (not street washing), and individual vehicle washing for personal purposes meet the criteria below:</p> <ul style="list-style-type: none"> - notification is provided to inform the public or employees of the use of reclaimed water (Non Potable Water) and that the reclaimed water is not intended for drinking - use of reclaimed water in decorative ponds or fountains require regular inspection by the Permittee to ensure permanent signs/notification and to ensure no discharge occurs from the fountains/ponds - use of reclaimed water for vehicle washing is conducted in a manner to ensure minimal surface runoff - the generator of the reclaimed water develops and maintains a program of education and approval for all reclaimed water users - the generator of the reclaimed water develops and maintains a program of record keeping for distribution of reclaimed water - the generator of the reclaimed water develops and maintains a program of routine review and inspection of reclaimed water users. <p>Verify that reclaimed water used for urinal and toilet flushing or fire protection in sprinkler systems located in commercial or industrial facilities is approved by the Director.</p> <p>Verify that reclaimed water is not used for the following:</p> <ul style="list-style-type: none"> - irrigation of direct food chain crops - swimming pools, hot-tubs, spas or similar uses -direct reuse as a raw potable water supply. <p>Verify that tank trucks and other equipment used to distribute reclaimed water are identified with advisory signs.</p> <p>Verify that tank trucks used to transport reclaimed water are not used to transport potable water that is used for drinking or other potable purposes.</p> <p>Verify that tank trucks used to transport reclaimed water are not filled through on-board piping or removable hoses that may subsequently be used to fill tanks with water from a potable water supply.</p> <p>Verify that the generator of the reclaimed water develops and maintains a program of education and approval for all reclaimed water users.</p> <p>Verify that the generator of the reclaimed water develops and maintains a program of record keeping for bulk distribution of reclaimed water.</p> <p>Verify that the generator of the reclaimed water develops and maintains a program</p>

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<p>WA.155.19.NC. Permitted reclaimed water systems must meet setback requirements (15A NCAC 2T.0912) [Added March 2007].</p> <p>WA.155.20.NC. Permitted reclaimed water systems must have an operation and maintenance plan (15A NCAC 2T.0913) [Added March 2007].</p> <p>WA.155.21.NC. Permitted reclaimed water systems must have a residuals management plan (15A NCAC 2T.0914) [Added March 2007].</p>	<p>of routine review and inspection of reclaimed water users.</p> <p>Verify that setback requirements for reclaimed water systems (see Appendix 12-4) are met.</p> <p>(NOTE: No setback between the application area and property lines is required.)</p> <p>Verify that an operation and maintenance plan is maintained for all reclaimed water systems.</p> <p>Verify that the plan does the following:</p> <ul style="list-style-type: none"> - describes the operation of the system in sufficient detail to show what operations are necessary for the system to function and by whom the functions are to be conducted - provides a map of all distribution lines and record drawings of all irrigation systems under the permittee's control - describes anticipated maintenance of the system - includes provisions for safety measures including restriction of access to the site and equipment, as appropriate - includes spill control provisions including: <ul style="list-style-type: none"> - response to upsets and bypasses including control, containment, and remediation; and - contact information for plant personnel, emergency responders, and regulatory agencies. <p>Verify that a residuals management plan is maintained for all reclaimed water systems that generate residuals.</p> <p>Verify that the plan includes the following:</p> <ul style="list-style-type: none"> - a detailed explanation as to how the residuals will be collected, handled, processed, stored and disposed - an evaluation of the residuals storage requirements for the treatment facility based upon the maximum anticipated residuals production rate and ability to remove residuals - a permit for residuals utilization, a written commitment to the Permittee of a Division approved residuals disposal/utilization program accepting the residuals - if oil, grease, grit, or screenings removal and collection is a designed unit process, a detailed explanation as to how the oil/grease will be collected, handled, processed, stored and disposed.

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<p>WA.155.22.NC. Contain closed-loop recycle systems that are permitted by regulation must meet specific requirements (15A NCAC 2T.1001 and 2T.1003) [Added March 2007].</p>	<p>(NOTE: This checklist item applies to closed-loop recycle systems in which nondomestic wastewater is repeatedly recycled back through the process in which the waste was generated. The following systems are not regulated by this section:</p> <ul style="list-style-type: none"> - the reuse or return of wastewater from a permitted animal waste lagoon facility for waste flushing - the recycling of wastewater from groundwater remediation systems through an Injection Well or Infiltration Gallery - the reuse of wastewater through treatment and distribution as reclaimed water.) <p>Verify that, when the wastewater return is contained and is under roof within an industrial or commercial process and there is no anticipated release of wastewater, the facility develops and maintains a spill control plan in the event of a release and earthen basins are not used.</p> <p>Verify that, when rinse water is recycled at concrete mixing facilities for concrete mix removal from equipment, the following requirements are met:</p> <ul style="list-style-type: none"> - the wastewater is contained within concrete structures - there is sufficient storage capacity to contain the runoff from a 24-hour, 25-year storm event plus one foot freeboard - the facility develops and maintains a spill control plan in the event of a wastewater release - the facility notifies the appropriate Division regional office in writing noting the owner, location, and that the design complies with the criteria. <p>Verify that, when wash and rinse water at vehicle wash facilities is recycled, the following requirements are met:</p> <ul style="list-style-type: none"> - the wastewater is contained within concrete, steel or synthetic structures (i.e. not including earthen basins) - all vehicle washing is conducted under roof - there are no precipitation inputs (direct or indirect) - the facility develops and maintains a spill control plan in the event of a wastewater release. <p>(NOTE The reuse or return of wastewater within the treatment works of a permitted wastewater treatment system is permitted by regulation without additional criteria)</p> <p>Verify that the permitted by regulation facility also complies with the general requirements for permits by regulation (see WA.148.3.NCchnge.).</p>
<p>WA.155.23.NC. Closed-loop recycle systems must be permitted (15A NCAC</p>	<p>Verify that a permit application is submitted for all closed-loop recycle systems including:</p>

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<p>2T.1004) [Added March 2007].</p> <p>WA.155.24.NC. Permitted closed-loop recycle systems must meet design criteria design (15A NCAC 2T.1005) [Added March 2007].</p>	<ul style="list-style-type: none"> - a general description including how the wastewater is generated, how the wastewater will be recycled, and contingencies in case of system failure - engineering design documents - site plans - property ownership documentation - for industrial waste, a complete chemical analysis of the typical wastewater - a detailed explanation as to how the residuals will be collected, handled, processed, stored and disposed. <p>Verify that there is no public access to the wastewater treatment equipment, wastewater storage structures or to the wastewater within a closed-loop recycle facility.</p> <p>Verify that, where potable water is used to supplement a closed-loop recycle water system, an air gap separation exists between the potable water and closed-loop recycle water systems.</p> <p>Verify that the system has the ability to stop production of effluent, return the effluent back to the treatment facility, store the effluent, or discharge the effluent to another permitted wastewater treatment facility when recycling can not be conducted.</p> <p>Verify that essential treatment units are provided in duplicate where proper operation of the treatment unit is essential to the operation of the closed-loop recycle system and the operation can not safely or efficiently be immediately stopped or altered to operate without the closed-loop recycle system.</p> <p>Verify that an automatically activated standby power source, system shutdown, or other means is employed to prevent improperly treated wastewater from entering a treated waste water storage structure or from being recycled where loss of power would create an unsafe condition.</p> <p>Verify that a water tight seal on all treatment/storage units or a minimum of 2 feet protection from the 100-year flood is provided.</p> <p>Verify that storage units in a closed-loop recycle system are designed to contain the accumulation of water from a 25-year, 24-hour storm event with 1 foot freeboard, unless the system is protected from rainfall and runoff.</p> <p>Verify that the bottoms of earthen impoundments, trenches or other similar excavations are at least 4 feet above the bedrock surface, except that the bottom of excavations that are less than 4 feet above bedrock have a liner with a hydraulic conductivity no greater than 1×10^{-7} centimeters per second.</p> <p>Verify that treatment works and disposal systems utilizing earthen basins, lagoons, ponds or trenches, excluding holding ponds containing non-industrial treated effluent prior to spray irrigation, for treatment, storage or disposal have either:</p>

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WA.155.25.NC. Permitted closed-loop recycle systems must meet setback requirements (15A NCAC 2T.1006) [Added March 2007].</p> <p>WA.155.26.NC. Permitted closed-loop recycle systems must have an operations and maintenance plan (15A NCAC 2T.1007) [Added March 2007].</p> <p>WA.155.27.NC. Permitted closed-loop recycle systems must have an Residuals Management plan (15A NCAC 2T.1008) [Added March 2007].</p>	<p>a liner of natural material at least one foot in thickness and having a hydraulic conductivity of no greater than 1×10^{-6} centimeters per second when compacted</p> <ul style="list-style-type: none"> - a synthetic liner of sufficient thickness to exhibit structural integrity and an effective hydraulic conductivity no greater than that of the natural material liner. <p>Verify that the setback requirements for treatment/storage units (see Appendix 12-4) are met.</p> <p>Verify that setback waivers are written, notarized, signed by all parties involved and recorded with the County Register of Deeds.</p> <p>Verify that an operations and maintenance plan are maintained for all closed-loop recycle systems.</p> <p>Verify that the operations and maintenance plan includes:</p> <ul style="list-style-type: none"> - a description of the system operation in sufficient detail to show what operations are necessary for the system to function and by whom the functions are to be conducted - a description of anticipated maintenance of the system - provisions for safety measures including restriction of access to the site and equipment, as appropriate - spill control provisions including: <ul style="list-style-type: none"> - response to upsets and bypasses including control, containment, and remediation - contact information for plant personnel, emergency responders, and regulatory agencies. <p>Verify that a residuals management plan is maintained for all closed-loop recycle systems that generate residuals.</p> <p>Verify that the plan includes the following:</p> <ul style="list-style-type: none"> - a detailed explanation as to how the residuals will be collected, handled, processed, stored and disposed of - an evaluation of the residuals storage requirements for the treatment facility based upon the maximum anticipated residuals production rate and ability to remove residuals - a written commitment to the Permittee of a Division approved residuals disposal/utilization site for the acceptance of the residuals - if oil, grease, grit, or screenings removal and collection is a designed unit

COMPLIANCE CATEGORY: WASTEWATER MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
	process, a detailed explanation as to how the oil/grease will be collected, handled, processed, stored and disposed.

Appendix 12-1

Groundwater Classifications

(Source: 15A NCAC 2L.0201) [Citation Revised March 2007]

- Class GA groundwaters; usage and occurrence:
 1. Best Usage. Existing or potential source of drinking water supply for humans.
 2. Conditions Related to Best Usage. This class is intended for those groundwaters in which chloride concentrations are equal to or less than 250 mg/L, and which are considered suitable for drinking in their natural state, but which may require treatment to improve quality related to natural conditions.
 3. Occurrence. In the saturated zone.
- Class GSA groundwaters; usage and occurrence:
 1. Best Usage. Existing or potential source of water supply for potable mineral water and conversion to fresh waters.
 2. Conditions Related to Best Usage. This class is intended for those groundwaters in which the chloride concentrations due to natural conditions is in excess of 250 mg/L, but which otherwise may be considered suitable for use as potable water after treatment to reduce concentrations of naturally occurring substances.
 3. Occurrence. In the saturated zone.
- Class GC groundwaters; usage and occurrence:
 1. Best Usage. The best usage of GC groundwaters is as a source of water supply for purposes other than drinking, including other domestic uses by humans.
 2. Conditions Related to Best Usage. This class includes those groundwaters that do not meet the quality criteria for GA or GSA groundwaters and for which efforts to improve groundwater quality would not be technologically feasible, or not in the best interest of the public. Continued consumption of waters of this class by humans could result in adverse health affects.
 3. Occurrence. Groundwaters of this class may be defined by the Commission pursuant to Section.0300 of this Subchapter on a case-by-case basis.

Appendix 12-2

Surface Water Classifications

(Source: 15A NCAC 2B.0101(c), (d), and (e)) [Citation Revised March 2007]

- Freshwater Classifications
 1. Class C - freshwaters protected for secondary recreation, fishing, aquatic life including propagation and survival, and wildlife; all freshwaters are classified to protect these uses at a minimum
 2. Class B - freshwaters protected for primary recreation, which includes swimming on a frequent or organized basis and all Class C uses
 3. Class WS-I - waters protected as water supplies which are essentially in natural and undeveloped watersheds in public ownership; point source discharges of treated wastewater are permitted pursuant to Rules.0104 and.0211 of Subchapter 2B; local programs to control nonpoint sources and stormwater discharges of pollution are required; suitable for all Class C uses
 4. Class WS-II - waters protected as water supplies which are generally in predominantly undeveloped watersheds; point source discharges of treated wastewater are permitted pursuant to Rules.0104 and.0211 of Subchapter 2B; local programs to control nonpoint sources and stormwater discharges of pollution are required; suitable for all Class C uses
 5. Class WS-III - waters protected as water supplies which are generally in low to moderately developed watersheds; point source discharges of treated wastewater are permitted pursuant to Rules.0104 and.0211 of Subchapter 2B; local programs to control nonpoint sources and stormwater discharges of pollution are required; suitable for all Class C uses
 6. Class WS-IV - waters protected as water supplies which are generally in moderately to highly developed watersheds; point source discharges of treated wastewater are permitted pursuant to Rules.0104 and.0211 of Subchapter 2B; local programs to control nonpoint sources and stormwater discharges of pollution are required; suitable for all Class C uses
 7. Class WS-V - waters protected as water supplies which are generally upstream of and draining to Class WS-IV waters; or previously used for drinking water supply purposes or waters used by industry to supply their employees, but not municipalities or counties, with a raw drinking water supply source, although this type of use is not restricted to a WS-V classification. The Commission may consider a more, protective classification for the water supply if a resolution requesting a more protective classification is submitted from all local governments having land use jurisdiction in the affected watershed; no categorical restrictions on watershed development or treated wastewater discharges are required; however, the Commission or its designee, may apply appropriate management requirements as deemed necessary for the protection of downstream receiving waters (15A NCAC 2B.0203); suitable for all Class C uses.
- Tidal Salt Water Classifications.
 1. Class SC - saltwater protected for secondary recreation, fishing, aquatic life including propagation and survival, and wildlife; all saltwaters are classified to protect these uses at a minimum
 2. Class SB - saltwaters protected for primary recreation, which includes swimming on a frequent or organized basis and all Class SC uses
 3. Class SA - suitable for commercial shellfishing and all other tidal saltwater uses.
- Supplemental Classifications.
 1. Trout waters (Tr) - freshwaters protected for natural trout propagation and survival of stocked trout.
 2. Swamp waters (Sw) - waters, which have low velocities, and other natural characteristics which are different from adjacent streams.
 3. Nutrient Sensitive Waters (NSW) - waters subject to growths of microscopic or macroscopic vegetation requiring limitations on nutrient inputs.
 4. Outstanding Resource Waters (ORW) - unique and special waters of exceptional state or national recreational or ecological significance which require special protection to maintain existing uses; no new discharges or expanded discharges will be permitted into these waters.
 5. High Quality Waters (HQW) - waters rated as excellent based on biological and physical/chemical characteristics through Division monitoring or special studies, native and special native trout waters (and their tributaries) designated by the Wildlife Resources Commission, primary nursery areas (PNA)

designated by the Marine Fisheries Commission and other functional nursery areas designated by the Wildlife Resources Commission, critical habitat areas designated by the Wildlife Resources Commission or the Department of Agriculture, all water supply watersheds classified as either WS-I or WS-II or those for which a formal petition for reclassification as WS-I or WS-II has been received from the appropriate local government and accepted by the Division of Environmental Management, and all Class SA waters.

6. Future Water Supply (FWS) - waters that have been requested by a local government and adopted by the Commission as a future source for drinking, culinary, or food-processing purposes. Local government(s) requesting this reclassification must provide to the Division evidence of intent which may include one or a combination of the following: capital improvement plans, a Water Supply Plan as described in G.S. 143-355(l), bond issuance for the water treatment plant or land acquisition records. A 1:24,000 scale U.S. Geological Survey topographical map delineating the location of the intended water supply intake is also required. Requirements for activities administered by the State of North Carolina, such as the issuance of permits for landfills, NPDES wastewater discharges, land application of residuals, and road construction activities will be effective upon reclassification for future water supply use. The requirements shall apply to the critical area and balance of the watershed or protected area as appropriate. Upon receipt of the final approval letter from the Division of Environmental Health for construction of the water treatment plant and water supply intake, the Commission will initiate rule-making to modify the Future, Water Supply supplemental classification. Local government implementation is not required until 270 days after the Commission has modified the Future Water Supply (FWS) supplemental classification through the rulemaking process and notified the affected local government(s) that appropriate local government land use requirements applicable for the water supply classifications are to be adopted, implemented, and submitted to the Commission for approval. Local governments may also adopt land use ordinances that meet or exceed the state's minimum requirements for water supply watershed protection prior to the end of the 270 day deadline. The requirements for FWS may also be applied to waters formerly used for drinking water supply use, and currently classified for water supply use, at the request of local government(s) desiring protection of the watershed for future, water supply use.

Appendix 12-3

[Deleted March 2007]

(NOTE: 15A NCAC 2H.0217 was repealed.)

Appendix 12-4

Minimum Treatment Works and Disposal System Buffer Zone Requirements

(15A NCAC 2T.0506, 2T.0706, 2T.0912, 2T.1006, 2T. 1108, 2T.1506, and 2T.1606) [Revised March 2007]

15A NCAC 2T.0506 Wastewater Irrigation Systems

(a) The setbacks for irrigation sites shall be as follows:

	Spray (feet)	Drip (feet)
Any habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site	400	100
Any habitable residence or place of public assembly owned by the permittee to be maintained as part of the project site	200	15
Any private or public water supply source	100	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	100	100
Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	100	100
Surface water diversions (ephemeral streams, waterways, ditches)	25	25
Any well with exception of monitoring wells	100	100
Any property line	150	50
Top of slope of embankments or cuts of two feet or more in vertical height	15	15
Any water line from a disposal system	10	10
Subsurface groundwater lowering drainage systems	100	100
Any swimming pool	100	100
Public right of way	50	50
Nitrification field	20	20
Any building foundation or basement	15	15

(b) The setbacks for treatment and storage units

	(feet)
Any habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site	100
Any private or public water supply source	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	50
Any well with exception of monitoring wells	100
Any property line	50

15A NCAC 2T. 0706 High Rate Infiltration Systems

(a) The setbacks for Infiltration Units shall be as follows:

	(feet)
Any habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site	400
Any habitable residence or place of public assembly owned by the permittee to be maintained as part of the project site	200
Any private or public water supply source	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	200
Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	200
Subsurface groundwater lowering drainage systems	200
Surface water diversions (ephemeral streams, waterways, ditches)	50
Any well with exception of monitoring wells	100
Any property line	200
Top of slope of embankments or cuts of two feet or more in vertical height	100
Any water line from a disposal system	10
Any swimming pool	100
Public right of way	50
Nitrification field	20
Any building foundation or basement	15
Impounded public water supplies	500
Public shallow groundwater supply (less than 50 feet deep)	500

(b) Setbacks in Paragraph (a) of this Rule to surface waters, groundwater lowering ditches, and subsurface groundwater lowering drainage systems shall be 100 feet if the treatment units are designed to meet a Total Nitrogen of 7 mg/l and Total Phosphorus of 3 mg/l effluent limit.

(c) Setbacks in Paragraph (a) of this Rule to surface waters, groundwater lowering ditches, and subsurface groundwater lowering drainage systems shall be 50 feet if the treatment units are designed to meet a Total Nitrogen of 4 mg/l and Total Phosphorus of 2 mg/l effluent limit. This setback provision does not apply to SA waters.

(d) Treatment and storage facilities associated with systems permitted under this Section shall adhere to the setback requirements in Section .0500 of this Subchapter except as provided in this Rule.

15A NCAC 2T.0912: Reclaimed Water Systems

(a) Treatment and storage facilities associated with systems permitted under this Section shall adhere to the setback requirements in Section .0500 of this Subchapter except as provided in this Rule.

(b) The setbacks for irrigation and utilization areas shall be as follows:

	feet
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands) not classified SA	25
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands) classified SA	100
Any well with exception to monitoring wells	100

(c) No setback between the application area and property lines shall be required.

15A NCAC 2T.1006: Closed-Loop Recycle Systems

(a) The setbacks for Treatment/storage units shall be as follows:

	(feet)
Any habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site	100
Any private or public water supply source	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	50
Any well with the exception of a Division approved groundwater monitoring well	100
Any property line	50

15A NCAC 2T.1108: Residuals Management

(a) For residuals treatment and storage facilities, the following minimum setbacks (i.e., in feet) shall be adhered to:

	feet
Habitable residences or places of public assembly under separate ownership or not to be maintained as part of the project site	100
Private or public water supply sources	100
Surface waters (streams - intermittent and perennial, lakes, perennial waterbodies, and wetlands)	50
Wells with exception to monitoring wells	100
Property lines	50

(b) For land onto which bulk residuals are applied or stockpiled, the following minimum setbacks (i.e., in feet) shall be adhered to:

(1) If the bulk residuals meet the requirements of Rules .1105(c), .1106(b), and .1107 of this Section:

	Liquid Residuals	Cake Residuals
Private or public water supply sources	100	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	100	25
Surface water diversions (ephemeral streams, waterways, ditches)	25	0
Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	25	0
Wells with exception to monitoring wells	100	100
Bedrock outcrops	25	0

(2) If the bulk residuals do not meet the requirements of Rules .1105(c), .1106(b), and .1107 of this Section:

	Surface Application by Vehicle	Surface Application by Irrigation	Injection Incorporation
Habitable residences or places of public assembly under separate ownership or not to be maintained as part of the project site	400	400	200
Habitable residences or places of public assembly owned by the permittee, the owner of the land, or the Lessee/ operator of the land to be maintained as part of the project site	0	200	0
Property lines	50	150	50
Public rights of way	50	50	50
Private or public water supply sources	100	100	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	100	100	50
Surface water diversions (ephemeral streams, waterways, ditches)	25	100	25
Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	25	100	25
Subsurface groundwater lowering drainage systems	0	100	0
Wells with exception to monitoring wells	100	100	100
Bedrock outcrops	25	25	25
Top of slope of embankments or cuts of two feet or more in vertical height	15	15	15
Building foundations or basements	0	15	0
Water lines	0	10	0
Swimming pools	100	100	100
Nitrification fields	0	20	0

(c) For the construction and operation of surface disposal units, the following minimum setbacks (i.e., in feet) shall be adhered to:

	feet
Habitable residences or places of public assembly under separate ownership or not to be maintained as part of the project site	400
Property lines	50
Public rights of way	50
Private or public water supply sources	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	100
Surface water diversions (ephemeral streams, waterways, ditches)	25
Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	100
Subsurface groundwater lowering drainage systems	100
Wells with exception to monitoring wells	100
Water lines	10
Swimming pools	100

15A NCAC 2T.1506: Soil Remediation Systems

Remediation systems shall adhere to the following setbacks and greater where necessary to comply with minimum horizontal distance requirements set by the Division pursuant to Subchapter 15A NCAC 02L .0107:

	Feet
Any habitable residence or place of public assembly under separate ownership or not to be maintained as part of the project site	100
Any well with the exception of a Division approved groundwater monitoring well	100
Surface waters (streams - intermittent and perennial, perennial waterbodies, and wetlands)	100
Surface water diversions (ephemeral streams, waterways, ditches)	25
Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	25
Subsurface groundwater lowering drainage systems	25
Any building foundation except treatment facilities	15
Any basement	15
Any property line	50
Any water line	10
Any swimming pool	100
Rock outcrops	25
Public right-of-way	50

15A NCAC 2T.1606: Groundwater Remediation Systems

The location of the infiltration gallery or injection well(s) must meet the setback requirements specified below unless it can be demonstrated that these requirements cannot be met, and that operation of the infiltration gallery(ies) or injection well(s) at the proposed location(s) will not result in the migration of contaminants into previously uncontaminated areas, and a contravention of groundwater standards beyond the compliance boundary. The following setbacks (in feet) are applicable to these systems:

	feet
any well with the exception of an approved groundwater monitoring well	100
surface waters streams - intermittent and perennial, perennial waterbodies, and wetlands)	100
any property under separate ownership	50
structures - above-ground (e.g. buildings, retention walls)	10
structures - subsurface (e.g. utilities, basements, swimming pools)	15
any water line	10
rock outcrops	50
top of slope of embankments or cuts of two feet or more in vertical height	15

groundwater lowering ditches (where the bottom of the ditch intersects the SHWT)	100
surface water diversions (ephemeral streams, waterways, ditches)	25
subsurface groundwater lowering drainage systems	100

Appendix 12-5

Effluent Limitations for Wastewater Treatment Facilities

(Source: 15A NCAC 2B.0406(a)(2)) [Citation Revised March 2007]

Effluent Characteristic	Monthly Average	Weekly Average Maximum
BOD ₅	30 mg/L	45 mg/L
Reserved Total Suspended Solids	30 mg/L	45 mg/L
Reserved Fecal Coliform	Effluent limitations for coliform bacteria and pH are imposed only if necessary to maintain compliance with applicable water quality standards.	
Reserved pH		

Appendix 12-6

Effluent Limitations for Waste Stabilization Ponds

(Source: 15A NCAC 2B.0406(a)(3)) [Citation Revised March 2007]

Effluent Characteristic	Monthly Average	Weekly Average Maximum
BOD5	30 mg/L	45 mg/L
Reserved Total Suspended Solids	90 mg/L	135 mg/L
Reserved Fecal Coliform	Effluent limitations for coliform bacteria and pH are imposed only if necessary to maintain compliance with applicable water quality standards.	
Reserved pH		

Appendix 12-7

Classification of Water Pollution Control Systems

(Source: 15A NCAC 8G.0301 through 8G.0308) [Revised March 2007]

15A.NCAC 8G.0301 Applicability

- (a) The purpose of this Section is to establish procedures for the classification of water pollution control systems.
- (b) Notwithstanding the requirements in Rules .0302 through .0307 of this Section, the Commission may modify the classification of a water pollution control system when:
 - (1) conditions created by system design features, or inherent operational requirements, exist which make normal operation of the system more or less complex;
 - (2) upgrades or other modifications to a system are completed; or
 - (3) changes in Commission classification rules are made.
- (c) In-plant processes and related water pollution control equipment which are integral parts of direct industrial production, are not considered water pollution control systems for the purpose of this Section.
- (d) Water Pollution Control Systems permitted under rules adopted by the Commission for Health Services shall be classified pursuant to Rule .0307 of this Section.
- (e) Water Pollution Control Systems permitted under rules adopted by the Environmental Management Commission shall be classified pursuant to Rules .0302 through .0308 of this Section.
- (f) Reservoirs, settling ponds and associated pumps and piping which are an integral part of closed-loop water recycle systems for the non-biological and non-toxic treatment of process water at sand, gravel, crushed stone and similar operations shall not be subject to the requirements of these Rules unless the Commission determines that the system is not being properly operated or maintained in accordance with permit conditions.
- (g) Any water pollution control system, regardless of type or ownership, may be classified and required to designate an Operator in Responsible Charge (ORC) and a Back-up Operator in Responsible Charge (Back-up ORC), in the event that the Commission determines that the system is not being properly operated or maintained.

15A.NCAC 8G.0302 Classification of Biological Water Pollution Control Treatment Systems

- (a) The following discharging systems are assigned a classification of Grade I Biological Water Pollution Control System unless the permitted flow, or operational complexity of the system requires a higher classification:
 - (1) septic tank/sand filter systems;
 - (2) biological lagoon systems; and
 - (3) constructed wetlands and associated appurtenances.
- (b) Systems that utilize an activated sludge or fixed growth process with a permitted flow less than or equal to 0.5 million gallons per day (mgd) are assigned the classification of Grade II Biological Water Pollution Control System.
- (c) Systems utilizing an activated sludge or fixed growth process with permitted flows of greater than 0.5 through 2.5 million gallons per day (mgd) are assigned the classification of Grade III Biological Water Pollution Control System.
- (d) Systems utilizing an activated sludge or fixed growth process with a permitted flow greater than 2.5 million gallons per day (mgd) are assigned a classification of Grade IV Biological Water Pollution Control System.
- (e) Any system receiving a classification of Grade II Biological Water Pollution Control System that is required to achieve nutrient reduction is assigned the classification of Grade III Biological Water Pollution Control System.
- (f) Any system receiving a classification of Grade III Biological Water Pollution Control System that is required to achieve nutrient reduction is assigned the classification of Grade IV Biological Water Pollution Control System.

15A.NCAC 8G.0303 Classification of Water Pollution Control Collection Systems

- (a) Water pollution control collection systems operated to convey wastewater to water pollution control systems which are permitted or tributary to municipalities, regional water pollution control systems, water and sewer authorities, public utilities, or are a Grade II, III or IV state or federally owned system, are subject to classification in accordance with Rule .0303(b) of this Section. Any collection system, regardless of

ownership, is classified pursuant to this Rule and required to designate an Operator in Responsible Charge (ORC) and a Back-up Operator in Responsible Charge (Back-up ORC) if the Commission determines that the system is not being operated and maintained in a manner which prevents the escape of wastewater from the system into the environment.

(b) Collection systems are assigned the lower grade classification that is either:

(1) the same as the grade of the biological water pollution control system to which the collection system is tributary; or

(2) based on the population served by the collection system in accordance with the following:

- | | |
|--------------------|------------|
| - 1,500 or less | Grade I; |
| - 1,501 to 15,000 | Grade II; |
| - 15,001 to 50,000 | Grade III; |
| - 50,001 or more | Grade IV. |

In the event that the population served cannot be determined, the equivalent population served shall be calculated by using the design flow of the system divided by a flow of 60 gallons per day per person.

15A.NCAC 8G.0304 Classification of Spray Irrigation Water Pollution Control Systems

(a) Systems which utilize surface irrigation for the treatment, reuse or disposal of wastewater are classified as surface irrigation water pollution control systems. Those systems which contain only preliminary treatment processes such as septic tanks, sand filters, oil/water separators, lagoons, storage basins, physical screening, or sedimentation processes are not subject to additional operator requirements as specified in Rule .0302 or .0306 of this Section.

(b) Any surface irrigation system that has, as part of its treatment process, systems other than those specified in Paragraph (a) of this Rule, is subject to additional classification pursuant to these Rules.

15A.NCAC 8G.0305 Classification of Land Application of Residuals Systems

Systems permitted for the land application of:

- (1) residuals that are produced by a water pollution control system; or
- (2) contaminated soils;

are classified as a land application of residuals system.

15A.NCAC 8G.0306 Classification of Physical/Chemical Water Pollution Control Systems

(a) Any water pollution control system, including systems designed for the remediation of contaminated groundwater, that utilizes a primarily physical process to treat wastewaters is classified as a Grade I Physical/Chemical Water Pollution Control System.

(b) Any water pollution control system that utilizes a primarily chemical process to treat wastewaters, including those systems whose treatment processes are augmented by physical processes, is classified as a Grade II Physical/Chemical Water Pollution Control System. Any reverse osmosis, electrodialysis, and ultrafiltration system is classified as a Grade II Physical/Chemical Water Pollution Control System.

(c) Any water pollution control system that has, as part of its treatment process, a biological water pollution control system is subject to additional classification as a biological water pollution control system.

(d) Any water pollution control system subject to classification under Rule .0302 of this Section, utilizing a physical or chemical process to enhance an activated sludge or fixed growth process, is not subject to additional classification under this Rule.

15A.NCAC 8G.0307 Classification of Subsurface Water Pollution Control Systems

(a) Systems permitted under rules adopted by the Environmental Management Commission which utilize the soil for the subsurface treatment and disposal of wastewater shall be classified as subsurface water pollution control systems.

(b) Any subsurface water pollution control system that is required to have a certified operator under 15A NCAC 18A .1961 shall be deemed classified as a subsurface water pollution control system.

(c) Any subsurface water pollution control system that has as part of its treatment process a water pollution control system that may be classified under Rules .0302 through .0307 of this Section shall be subject to additional classification. If the subsurface system consists only of septic tanks, pump tanks, siphon or pump dosing systems, sand filters, grease traps or grease interceptors, or oil/water separators, and subsurface disposal of the wastewater, no additional classification will be required.

15A.NCAC 8G.0308 Systems not Otherwise Classified

The Commission may classify any water pollution control system which is not otherwise classified when that system is receiving wastewater that has distinctly different characteristics from typical domestic wastewater or is a water pollution control system which contains treatment processes that are sufficiently different from the conventional treatment processes classified in Rules .0302 through .0306 of this Section.

Appendix 12-8

Location Distances for Individual Sewage Systems

(Source: 15A NCAC 18A.1950) [Revised March 2007; Citation Revised March 2009]

- (a) Every sanitary sewage treatment and disposal system shall be located at least the minimum horizontal distance from the following

Any private water supply source, including any well or spring	100 ft
Any public water supply source	100 ft
Streams classified as WS-I	100 ft
Waters classified as S.A.	100 ft from mean high water mark
Other coastal waters	50 ft, from mean high water mark
Any other stream, canal, marsh, or other surface waters	50 ft
Any Class I or Class II reservoir	100 ft, from normal pool elevation
Any permanent storm water retention pond	50 ft, from flood pool elevation
Any other lake or pond	50 ft from normal pool elevation
Any building foundation	5 ft
Any basement	15 ft
Any property line	10 ft
Top of slope of embankments or cuts of 2 ft or more vertical height	15 ft
Any water line	10 ft
Drainage systems:	
- interceptor drains, foundation drains, and stormwater diversions	
i. upslope	10 ft
ii. sideslope	15 ft
iii. downslope	25 ft
- groundwater ditches and devices	25 ft
Any swimming pool	15 ft
Any other nitrification field (except repair area)	20 ft.

- d) In addition to the requirements of .1950(a), sites to be used for subsurface disposal for design units with flows over 3,000 gallons per day, as determined in Rule .1949 (a) or (b) of this Section, which include one or more nitrification fields with individual capacities of greater than 1,500 gallons per day, shall be located at least the minimum horizontal distance from the following:

Any Class I or II reservoir or any public water supply source utilizing a shallow (under 50 feet) groundwater aquifer	500 feet
Any other public water supply source, unless determined to utilize a confined aquifer	200 feet
Any private water supply source, unless determined to utilize a confined aquifer	100 feet
Waters classified as SA	200 feet, from mean high water mark
Any waters classified as WS-I	200 feet
Any surface waters classified as WS-II, WS-III, B, or SB	100 feet
Any property line	25 feet

(e) Collection sewers, force mains, and supply lines shall be located at least the minimum horizontal distance from the following:

(1) Any public water supply source, including wells, springs, and Class I or Class II reservoirs.	100 feet, unless constructed of leak-proof pipe, such as ductile iron pipe with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 50 feet
(2) Any private water supply source, including wells and springs	50 feet, unless constructed of similar leakproof pipe, such as ductile iron pipe with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 25 feet
(3) Any waters classified as WS-I, WS-II, WS-III, B, SA, or SB	50 feet, unless constructed of similar leakproof pipe, such as ductile iron pipe with mechanical joints equivalent to water main standards, in which case the minimum setback may be reduced to 10 feet
(4) Any other stream, canal, marsh, coastal waters, lakes and other impoundments, or other surface waters	10 feet
(5) Any basement	10 feet
(6) Any property line	5 feet
(7) Top of slope of embankments or cuts of two feet or more vertical height	10 feet
(8) Drainage Systems:	
(a) Interceptor drains, storm drains, and storm water diversions	5 feet
(B) Ground-water lowering ditches and devices	10 feet
(9) Any swimming pool	10 feet
(10) Any other nitrification field	5 feet

;

Appendix 12-9

Discharges Exempt from NPDES Requirements

(Source: NCR 15A NCAC 2H.0106 (f)) [Added March 2003]

The following discharges are deemed to be permitted pursuant to G.S. 143-215.1(c) provided that no water quality standards are contravened, or expected to be contravened, and it shall not be necessary for the Division to issue separate permits for these activities:

- (1) filter backwash and draining associated with swimming pools
- (2) filter backwash from raw water intake screening devices
- (3) condensate from residential or commercial air conditioning units
- (4) individual non-commercial vehicle washing operations
- (5) flushing and hydrostatic testing water associated with utility distribution systems
- (6) discharges associated with emergency removal and treatment activities for spilled oil authorized by the federal or state on-scene coordinator when such removals are undertaken to minimize overall environmental damage due to an oil spill
- (7) groundwaters generated by well construction or other construction activities
- (8) landscape irrigation, foundation or footing drains, or water from crawl space pumps
- (9) street wash water
- (10) flows from fire fighting
- (11) excluding the provision in (6), discharges associated with biological or chemical decontamination activities performed as a result of an emergency declared by the Governor or the Director of the Division of Emergency Management and that are conducted by or under the direct supervision of the federal or state on-scene coordinator and that meet the following specific conditions:
 - (A) the volume of discharge produced by the decontamination activity is too large to be contained on-site
 - (B) the Division of Water Quality is informed prior to commencement of the discharge from the decontamination activity
 - (C) overland flow or other non-discharge options are deemed to be impractical by the authorities conducting the decontamination activity
 - (D) the discharge is not radiologically contaminated.

Appendix 12-10

Groundwater Quality Standards for Class GA, GSA and GC Groundwaters

(Source: NCR 15A NCAC 2L.0202(g) through (i)) [Added March 2006; Revised March 2008]

The standard refers to the total concentration of any constituent in a dissolved, colloidal or particulate form which is mobile in groundwater. This does not apply to sediment or other particulate matter which is preserved in a groundwater sample as a result of well construction or sampling procedures.

(1) acetone	0.7
(2) acenaphthene	0.08
(3) acenaphthylene	0.21
(4) acrylamide (propenamide)	0.000008
(5) anthracene	2.1
(6) arsenic	0.05
(7) atrazine and chlorotriazine metabolites	0.0030
(8) barium	2.0
(9) benzene	0.001
(10) benzo(a)anthracene (benz(a)anthracene)	0.0000479
(11) benzo(b)fluoranthene	4.79×10^{-5}
(12) benzo(k)fluoranthene	4.79×10^{-4}
(13) benzo(g,h,i,)perylene	0.21
(14) benzo(a)pyrene	4.79×10^{-6}
(15) boron:	0.315
(16) bromodichloromethane	0.00056
(17) bromoform (tribromomethane)	0.00443
(18) n-butylbenzene	0.07
(19) sec-butylbenzene	0.07
(20) tert-butylbenzene	0.07
(21) butylbenzyl phthalate	0.10
(22) cadmium	0.00175
(23) caprolactam	3.5
(24) carbofuran	0.035
(25) carbon disulfide	0.7
(26) carbon tetrachloride	0.000269
(27) chlordane	1.0×10^{-4}
(28) chloride	250.0
(29) chlorobenzene	0.05
(30) chloroethane	2.80
(31) chloroform (trichloromethane)	0.07
(32) chloromethane (methyl chloride)	2.6×10^{-3}
(33) 2-chlorophenol	0.00036
(34) 2-chlorotoluene	0.14
(35) chromium	0.05
(36) chrysene	0.00479
(37) cis-1,2-dichloroethene	0.07
(38) coliform organisms (total)	1 per 100 milliliters
(39) color	15 color units
(40) copper	1.0
(41) cyanide (free cyanide)	0.07
(42) 2, 4-D (2,4-dichlorophenoxy acetic acid)	0.07
(43) dibenz(a,h)anthracene	4.7×10^{-6}
(44) 1,2-dibromo-3-chloropropane	2.5×10^{-5}
(45) dichlorodifluoromethane (Freon-12; Halon)	1.4
(46) p,p'-dichlorodiphenyl dichloroethane (DDD)	1.4×10^{-4}
(47) p,p'-dichlorodiphenyltrichloroethane (DDT)	1.0×10^{-4}

(48) 1,1-dichloroethane	0.07
(49) 1,2-dichloroethane (ethylene dichloride)	0.00038
(50) 1,1-dichloroethylene (vinylidene chloride)	0.007
(51) 1,2-dichloropropane	0.00051
(52) 1,3-dichloropropene (cis and trans isomers)	0.00019
(53) dieldrin	2.2×10^{-6}
(54) di-n-butyl (or dibutyl) phthalate (DBP)	0.7
(55) diethylphthalate (DEP)	5.0
(56) di(2-ethylhexyl) phthalate (DEHP)	0.0025
(57) 2,4-dimethylphenol (m-xyleneol)	0.14
(58) di-n-octyl phthalate	0.14
(59) p-dioxane (1,4-diethylene dioxide)	0.007
(60) dioxin	2.2×10^{-10}
(61) diphenyl (1,1- diphenyl)	0.35
(62) dissolved solids (total)	500
(63) disulfoton	2.8×10^{-4}
(64) diundecyl phthalate (Santicizer 711)	0.14
(65) endosulfan II (beta-endosulfan)	0.0420
(66) endrin	0.002
(67) endrin	
(total Endrin includes endrin, endrin aldehyde, and endrin ketone)	2.1×10^{-3}
(68) epichlorohydrin (1-chloro-2,3-epoxypropane)	0.00354
(69) ethylbenzene	0.550
(70) ethylene dibromide (EDB; 1,2-dibromoethane)	4.0×10^{-7}
(71) ethylene glycol	14.0
(72) fluoranthene	0.28
(73) fluorene	0.28
(74) fluoride	2.0
(75) foaming agents	0.5
(76) gross alpha (adjusted)particle activity (excluding radium-226 and uranium)	15 pCi/l
(77) heptachlor	7.8×10^{-6}
(78) heptachlor epoxide	3.8×10^{-6}
(79) heptane	0.42
(80) hexachlorobenzene (perchlorobenzene)	0.00002
(81) hexachlorocyclohexane isomers (total Hexachlorocyclohexane: includes alpha,beta,delta,gamma, and epsilon isomers)	1.9×10^{-5}
(82) n-hexane	0.42
(83) indeno(1,2,3-cd)pyrene	4.79×10^{-5}
(84) iron	0.3
(85) isophorone	0.0368
(86) isopropylbenzene	0.070
(87) isopropyl ether (diisopropyl ether)	0.070
(88) lead	0.015
(89) lindane	2.0×10^{-4}
(90) manganese	0.05
(91) mercury	0.00105
(92) metadichlorobenzene (1,3-dichlorobenzene)	0.170
(93) methanol	3.5
(94) methoxychlor	0.035
(95) methylene chloride (dichloromethane)	0.0046
(96) methyl ethyl ketone (MEK; 2-butanone)	4.20
(97) 2-methylnaphthalene	0.0140
(98) 3-methylphenol (m-cresol)	0.0350
(99) 4-methylphenol (p-cresol)	3.5×10^{-3}

(100) methyl tert-butyl ether (MTBE)	0.2
(101) naphthalene	0.021
(102) nickel	0.1
(103) nitrate	(as N) 10.0
(104) nitrite	(as N) 1.0
(105) N-nitrosodimethylamine	7.0×10^{-7}
(106) orthodichlorobenzene (1,2-dichlorobenzene)	0.024
(107) oxamyl	0.175
(108) paradichlorobenzene (1,4-dichlorobenzene)	0.0014
(109) pentachlorophenol	0.00029
(110) petroleum aliphatic carbon fraction class C5 - C8	0.42
(111) petroleum aliphatic carbon fraction class C9 - C18	4.20
(112) petroleum aliphatic carbon fraction class C19 - C36	42.0
(113) petroleum aromatics carbon fraction class C9 - C22	0.210
(114) pH	6.5 - 8.5
(115) phenanthrene	0.21
(116) phenol	0.30
(117) phorate	1.4×10^{-3}
(118) n-propylbenzene	0.070
(119) pyrene	0.21
(120) selenium	0.05
(121) silver	0.0175
(122) simazine	0.004
(123) styrene (ethenylbenzene)	0.1
(124) sulfate	250.0
(125) tetrachloroethylene (perchloroethylene; PCE)	0.0007
(126) 2,3,4,6-tetrachlorophenol	0.210
(127) toluene (methylbenzene)	1.0
(128) toxaphene	3.1×10^{-5}
(129) 2, 4, 5,-TP (Silvex)	0.05
(130) trans-1,2-dichloroethene	0.10
(131) 1,1,1-trichloroethane (methyl chloroform)	0.2
(132) trichloroethylene (TCE)	0.0028
(133) trichlorofluoromethane	2.1
(134) 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113)	210.0
(135) 1,2,3- trichloropropane	5.0×10^{-6}
(136) 1,2,4-trimethylbenzene	0.350
(137) 1,3,5-trimethylbenzene	0.350
(138) vinyl chloride (chloroethylene)	1.5×10^{-5}
(139) xylenes (o-, m-, and p-)	0.53
(140) zinc	1.05

Class GSA Standards. The standards for this class shall be the same as those for Class GA except as follows:

- (1) chloride: allowable increase not to exceed 100 percent of the natural quality concentration.
- (2) total dissolved solids: 1000 mg/l.

Class GC Waters.

- (1) The concentrations of substances which, at the time of classification exceed the standards applicable to Class GA or GSA groundwaters shall not be caused to increase, nor shall the concentrations of other substances be caused to exceed the GA or GSA standards as a result of further disposal of contaminants to or beneath the surface of the land within the boundary of the area classified GC.
- (2) The concentrations of substances which, at the time of classification, exceed the standards applicable to GA or GSA groundwaters shall not be caused to migrate as a result of activities within the boundary of the GC classification, so as to violate the groundwater or surface water quality standards in adjoining waters of a different class.

- (3) Concentrations of specific substances, which exceed the established standard at the time of classification, shall be listed in Section .0300 of this Subchapter.

Appendix 12-11

Pollutant Limits for Residuals Management (15A NCAC 2T.1105) [Added March 2007]

(a) Bulk residuals or residuals that are sold or given away in a bag or other container shall not be applied to the land if the concentration of any pollutant in the residuals exceeds the ceiling concentration for that pollutant as stipulated in the following (i.e., on a dry weight basis):

Pollutant	Ceiling Concentration (milligrams per kilogram)
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

(b) Bulk residuals shall not be applied to the land if the land application causes the exceedance of the cumulative pollutant loading rate for any pollutant as stipulated in the following (i.e., on a dry weight basis):

Pollutant	Cumulative Pollutant Loading Rate (kilograms per hectare)
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

(1) A person shall determine compliance with the cumulative pollutant loading rates using one of the following methods:

- (A) by calculating the existing cumulative level of pollutants using actual analytical data from all historical land application events of residuals not otherwise exempted by this Paragraph or
- (B) for land on which land application events of residuals has not occurred or for which the data required in Rule .1105(b) is incomplete, by determining background concentrations through representative soil sampling.

(2) When applied to the land, bulk residuals shall be exempt from complying with this Paragraph as long as they meet all of the following criteria:

- (A) the monthly average concentrations stipulated in Rule .1105(c) of this Section.
- (B) the pathogen reduction requirements stipulated in Rule .1106(b) of this Section, and
- (C) the vector attraction reduction requirements stipulated in Rule .1107 of this Section.

(c) Bulk residuals shall not be applied to a lawn, home garden, or public contact use site nor shall residuals be sold or given away in a bag or other container for application to the land if the concentration of any pollutant in the residuals exceeds the concentration for that pollutant as stipulated in the following (i.e., on a dry weight basis):

Pollutant	Monthly Average Concentration (milligrams per kilogram)
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

(d) Bulk residuals shall not be placed in a surface disposal unit if the concentration of any pollutant in the residuals exceeds the concentration for that pollutant as stipulated in the following (i.e., on a dry weight basis):

Distance from Surface Disposal Unit Boundary to Closest Property Line (meters)	Ceiling Concentration (milligrams per kilogram)		
	Arsenic	Chromium	Nickel
0 to less than 25	30	200	210
25 to less than 50	34	220	240
50 to less than 75	39	260	270
75 to less than 100	46	300	320
100 to less than 125	53	360	390
125 and greater	62	450	420

Appendix 12-12
Pathogen Reduction Requirements
(15A NCAC 2T.1106(b) and (c)) [Added March 2007]

- (b) For biological residuals to be classified as Class A with respect to pathogens, the following shall be met
- (1) The requirements in this Paragraph are met either prior to meeting or at the same time as vector attraction reduction requirements in Rule .1107 of this Section are met, unless the vector attraction reduction methods stipulated in Rule .1107(a)(6), Rule .1107(a)(7), and Rule .1107(a)(8) of this Section are met.
 - (2) The biological residuals are monitored at the time that the biological residuals are used or disposed or are prepared for sale or giving away in a bag or other container for application to the land for the density of fecal coliform or *Salmonella* sp. bacteria to demonstrate the following:
 - (A) the density of fecal coliform is less than 1,000 Most Probable Number per gram of total solids (i.e., dry weight basis), or
 - (B) the density of *Salmonella* sp. bacteria is less than three Most Probable Number per four grams of total solids (i.e., dry weight basis).
 - (3) The biological residuals meet one of the following alternatives:
 - (A) Time/Temperature. The temperature of the biological residuals shall be maintained at a specific value for a period of consecutive time in accordance with the following:

Total Solids (percent)	Temperature (t) (degrees Celsius)	Time	Equation to Determine Minimum Holding Time (D) Days
>= 7	>= 50	>= 20 minutes	131,700,000
			----- 10[0.1400t]
>= 7	>= 50	>= 15 seconds { 1 }	131,700,000
			----- 10[0.1400t]
< 7	>= 50	>= 15 seconds < 30 minutes	131,700,000
			----- 10[0.1400t]
< 7	>= 50	>= 30 minutes	50,070,000
			----- 10[0.1400t]

{ 1 } - when residuals are heated by warmed gases or an immiscible liquid

(B) Alkaline Treatment. The pH of the biological residuals shall be raised to above 12 and remains above 12 for 72 consecutive hours. The temperature of the biological residuals shall be above 52 degrees Celsius for 12 hours or longer during the period that the pH of the biological residuals is above 12. At the end of the 72-hour period during which the pH is above 12, the biological residuals shall be air dried to achieve a total solids greater than 50 percent.

(C) Prior Testing for Enteric Viruses/Viable Helminth Ova. The biological residuals shall be analyzed prior to pathogen reduction treatment to determine whether the biological residuals contain enteric viruses or viable helminth ova. The density of enteric viruses prior to pathogen reduction treatment shall be less than one Plaque-forming Unit per four grams of total solids (i.e., dry weight basis) or the density of viable helminth ova shall be less than one per four grams of total solids (i.e., dry weight basis). When the density of enteric viruses or viable helminth ova are equal to or greater than these values, the biological residuals shall be considered to be Class A following pathogen reduction treatment if the resultant densities are less than these values and the operating parameters for the pathogen reduction treatment are documented to the satisfaction of the Division. After this demonstration, the biological residuals shall be considered to be Class A as long as the operating parameters for the pathogen reduction treatment are met and documented to the satisfaction of the Division.

(D) No Prior Testing for Enteric Viruses/Viable Helminth Ova. The density of enteric viruses in the biological residuals shall be less than one Plaque-forming Unit per four grams of total solids (i.e., dry weight basis) or the density of viable helminth ova in the biological residuals shall be less than one per

four grams of total solids (i.e., dry weight basis) at the time that the biological residuals are used or disposed or is prepared for sale or giving away in a bag or other contained for application to the land.

(E) Process to Further Reduce Pathogens - Composting. The biological residuals shall be composted using either the within-vessel method or the static aerated pile method, during which the temperature of the biological residuals is maintained at 55 degrees Celsius or higher for three consecutive days or longer. Alternatively, the biological residuals shall be composted using the windrow method, during which the temperature of the biological residuals is maintained at 55 degrees Celsius or higher for 15 consecutive days or longer. The windrow shall be turned five times during the period when the biological residuals are maintained at 55 degrees Celsius or higher, Natural decay of the biological residuals under uncontrolled conditions are not sufficient to meet this process.

(F) Process to Further Reduce Pathogens - Heat Drying. The biological residuals shall be dried by direct or indirect contact with hot gases to reduce the moisture content of the biological residuals to 10 percent or lower. During the process, either the temperature of the biological residuals particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with the biological residuals as they leave the dryer exceeds 80 degrees Celsius.

(G) Process to Further Reduce Pathogens - Heat Treatment. The biological residuals shall be heated to a temperature of 180 degrees Celsius or higher for 30 minutes. This process is only available to biological residuals that are in a liquid state.

(H) Process to Further Reduce Pathogens - Thermophilic Aerobic Digestion. The biological residuals shall be agitated with air or oxygen to maintain aerobic conditions, and the mean cell residence time of the biological residuals shall be 10 days at between 55 and 60 degrees Celsius. This process is only available to biological residuals that are in a liquid state.

(I) Process to Further Reduce Pathogens - Beta Ray Irradiation. The biological residuals shall be irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (i.e., approximately 20 degrees Celsius).

(J) Process to Further Reduce Pathogens - Gamma Ray Irradiation. The biological residuals shall be irradiated with gamma rays from certain isotopes, such as Cobalt 60 and Cesium 137, at room temperature (i.e., approximately 20 degrees Celsius).

(K) Process to Further Reduce Pathogens - Pasteurization. The temperature of the biological residuals shall be maintained at 70 degrees Celsius or higher for 30 minutes or longer.

(c) For biological residuals to be classified as Class B with respect to pathogens one of the following shall be met:

(1) Fecal Coliform Density Demonstration. Seven samples of the biological residuals are collected at the time the residuals are used or disposed, and the geometric mean of the density of fecal coliform in the samples collected is less than either 2,000,000 Most Probable Number per gram of total solids (i.e., dry weight) or 2,000,000 Colony Forming Units per gram of total solids (i.e., dry weight basis).

(2) Process to Significantly Reduce Pathogens. The biological residuals processed in a process to significantly reduce pathogens. The processes to significantly reduce pathogens are as follows:

(A) Aerobic Digestion. Biological residuals are agitated with air or oxygen to maintain aerobic conditions for a specific mean cell time at a specific temperature. Values for the mean cell residence time and temperature are between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.

(B) Air Drying. Biological residuals are dried on sand beds or on paved or unpaved basins for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.

(C) Anaerobic Digestion. Biological residuals are treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature are between 15 days at 35 to 55 degrees Celsius and 60 days at 20 degrees Celsius.

(D) Composting. Using either the within-vessel, static aerated pile, or windrow composting methods, the temperature of the biological residuals is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius. Natural decay of the biological residuals under uncontrolled conditions is not sufficient to meet this process

(E) Lime Stabilization. Sufficient lime is added to the biological residuals to raise the pH to 12 after two hours of contact.

Appendix 12-13

Vector Attraction Reduction Alternatives (15A NCAC 2T.1107 (a)) [Added March 2007]

The vector attraction reduction alternatives shall be as follows:

- (1) 38-Percent Volatile Solids Reduction. The mass of the volatile solids in the biological residuals shall be reduced by a minimum of 38 percent between the time that the biological residuals enter the digestion process and the time it is land applied.
- (2) 40-Day Bench Scale Test. A portion of previously anaerobically-digested biological residuals shall be further anaerobically-digested in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. The volatile solids in the biological residuals shall be reduced by less than 17 percent as measured from the beginning to the end of the test.
- (3) 30-Day Bench Scale Test. A portion of previously aerobically-digested biological residuals shall be further aerobically-digested in the laboratory in a bench-scale unit for 30 additional days at a temperature of 20 degrees Celsius. The previously aerobically-digested biological residuals shall either have a concentration of two percent total solids or less or shall be diluted with effluent down to two percent total solids at the start of the test. The volatile solids in the biological residuals shall be reduced by less than 15 percent as measured from the beginning to the end of the test.
- (4) Specific Oxygen Uptake Rate Test. The specific oxygen uptake rate (SOUR) for biological residuals treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (i.e., dry weight basis) corrected to a temperature of 20 degrees Celsius.
- (5) 14-Day Aerobic Processes. The biological residuals shall be treated in an aerobic process for 14 days or longer. During that time the temperature of the biological residuals shall be higher than 40 degrees Celsius, and the average temperature of the biological residuals shall be higher than 45 degrees Celsius.
- (6) Alkaline Stabilization. The pH of the biological residuals shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.
- (7) Drying of Stabilized Residuals. The biological residuals shall be dried to 75 percent total solids if the biological residuals contain no unstabilized solids from a primary wastewater treatment process. Mixing of the biological residuals with other materials shall not be used to meet this alternative.
- (8) Drying of Unstabilized Residuals. The biological residuals shall be dried to 90 percent total solids if the biological residuals contain unstabilized solids from a primary wastewater treatment process. Mixing of the biological residuals with other materials shall not be used to meet this alternative.
- (9) Injection.
 - (A) Biological residuals shall be injected below the surface of the land in accordance with 40 CFR 503.33(b)(9)(ii).
 - (B) If Class A with respect to pathogens, the biological residuals shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.
- (10) Incorporation.
 - (A) If Class B with respect to pathogens, the biological residuals shall be incorporated into the soil within six hours after application to the land.
 - (B) If Class A with respect to pathogens, the biological residuals shall be applied to the land within eight hours after being discharged from the pathogen treatment process.

Appendix 12-14
Minimum Separations For Sewer Systems

(15A NCAC 2T.0305(f)) [Added March 2007]

The following minimum separations shall be provided for the sewer system

Storm sewers and other utilities not listed below (vertical)	24 inches
Water mains (vertical-water over sewer including in benched trenches)	18 inches
or (horizontal)	10 feet
Reclaimed water lines (vertical - reclaimed over sewer)	18 inches
or (horizontal)	2 feet
Any private or public water supply source, including any wells, WS-I waters or Class I or Class II impounded reservoirs used as a source of drinking water	100 feet
Waters classified WS (except WS-I or WS-V), B, SA, ORW, HQW, or SB from normal high water (or tide elevation) and wetlands	50 feet
Any other stream, lake, impoundment, or ground water lowering and surface drainage ditches	10 feet
Any building foundation	5 feet
Any basement	10 feet
Top slope of embankment or cuts of 2 feet or more vertical height	10 feet
Drainage systems and interceptor drains	5 feet
Any swimming pool	10 feet
Final earth grade (vertical)	36 inches

SECTION 13

WATER QUALITY MANAGEMENT

North Carolina Supplement, March 2010

This section covers the state requirements for Water Quality Management and is intended to supplement the U.S. TEAM Guide. Refer to the U.S. TEAM Guide and the DOD Component Supplements for Federal, DOD, and service-specific requirements.

Regulations Adopted by Reference

North Carolina incorporates by reference, including any subsequent amendments and editions, the following regulations and standards: [Revised March 2010]

- the definitions contained in North Carolina General Statutes (GS) 130A-2, GS 130A-290, and GS 130A-313, including any subsequent amendments and editions
- the definitions contained in Title 40, Code of Federal Regulations (40 CFR) 141.2, except the following definitions are not adopted:
 1. Disinfection
 2. Maximum containment level
 3. Person
 4. Public Water System
 5. Supplier of water
- 40 CFR 141.42
- 40 CFR 141, Subpart I -- Control of Lead and Copper
- 40 CFR 141.23
- 40 CFR 141.11
- 40 CFR 141.62
- 40 CFR 141.24
- 40 CFR 141.40, except that 40 C.F.R. 141.40(n)(10) is not adopted
- 40 CFR 141.12, however, the maximum contaminant level (MCL) for total trihalomethanes applies to all community water systems and nontransient, noncommunity water systems regardless of population which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process
- 40 CFR 141.61
- 40 CFR 141.26
- 40 CFR 141.15
- 40 CFR 141.16
- 40 CFR 141.32, except that multi-lingual notice is given if 30 percent or more of consumers served by the system are non-English speaking
- 40 CFR 141.21, except for the following sections:
 1. 40 CFR 141.21(a)(2) concerning the reduction of monitoring frequency for community water systems serving 25 to 1000 persons
 2. 40 CFR 141.21(b)(3) concerning collection of large volume repeat samples in containers of any size
 3. 40 CFR 141.21(c)(2) concerning waiver of the 24-h limit for resampling
- 40 CFR 141.63
- 40 CFR 141.52
- 40 CFR 141.53
- 40 CFR 141.54
- 40 CFR 141. Subpart K
- standards set forth in American National Standards Institute (ANSI)/National Science Foundation (NSF) International, codified at ANSI/NSF Standard 60 and ANSI/NSF Standard 61
- 40 CFR 141.57

- 40 CFR 141.64
- 40 CFR 141.65
- 40 CFR 141.70
- 40 CFR 141.72
- 40 CFR 141.73
- 40 CFR 141.71, except that 40 C.F.R. 141.74(c)(2) reads as follows:
- The residual disinfectant concentration of the water entering the distribution system shall be monitored continuously, and the lowest value shall be recorded each day, except that if there is a failure in the continuous monitoring equipment, grab sampling every 4 h may be conducted in lieu of continuously monitoring, but for no more than five working days following the failure of the equipment. Systems serving 3300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequency of every 4 h that water is being treated
- 40 CFR 141.71
- 40 CFR 141.75.
- 40 CFR 141, Subpart L, Disinfection Residuals, Disinfection Byproducts, and Disinfection Byproduct Precursors and the provisions of 40 C.F.R. 141, Subparts U-Initial Distribution System Evaluations and Subpart V--Stage 2 Disinfection Byproducts Requirements
- 40 CFR 141, Subpart O, Consumer Confidence Reports. Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than six months per yr shall regulated as transient non-community water systems.
- 40 CFR 141, Subpart P, Enhanced Filtration and Disinfection. The provisions of 40 C.F.R. 141, Subpart S - Ground Water Rule The provisions are incorporated with the following exceptions: Fecal indicator for source water monitoring. When systems are required to conduct triggered source water monitoring or assessment source water monitoring under 40 CFR 141.402 (a) and (b) respectively, any of the following three fecal indicators can be used: E. coli, enterococci or coliphage.

Definitions

- *Abandon* - to discontinue the use of and to seal a well according to the requirements of NCAC 02C.0113 (15A NCAC 2C.0102) [Revised March 2010].
- *Abandonment or Plugging Record* - a systematic listing of permanent or temporary abandonment of a well and may contain a well log or description of amounts and types of abandonment material used, the method employed for abandonment, a description of formation location, formation thickness, and location of abandonment structures (15A NCAC 2C.0204).
- *Access Port* - an opening in the well casing or well head installed for the primary purpose of determining the position of the water level in the well or to facilitate disinfection (15A NCAC 2C.0102) [Revised March 2010].
- *Addition* - any structure that is constructed, altered or placed on property that contains one or more wells. This would not include replacement of existing equipment within the existing footprint of a structure and addresses only those situations for which a building permit is required (15A NCAC 3C.03020 [Added March 2009].
- *Artesian Flowing Well* -any well in which groundwater flows above the land surface without the use of a pump; where the static water level or hydraulic head elevation is greater than the land surface under natural conditions (15A NCAC 2C.0102) [Added March 2010].
- *Average* - (except bacterial) arithmetical average and includes analytical results of all samples taken during the specified period; all sampling is done as to obtain the most representative sample under prevailing conditions:
 1. daily average for dissolved oxygen, is of at least four samples
 2. weekly average means the average of all daily composite samples obtained during the calendar week; if only one grab sample is taken each day, the weekly average is the average of all daily grab samples; a minimum of three daily grab samples is needed to calculate a weekly average

3. monthly average means the average of all daily composites (or grab samples if only one per day) obtained during the calendar month (15A NCAC 2B.0202).
- *Best Management Practice (BMP)* - a structural or non-structural management-based practice used singularly or in combination to reduce nonpoint source inputs to receiving waters in order to achieve water quality protection goals (15A NCAC 2B.0202).
 - *Board of Health* - the County Board of Health or successor entity (15A NCAC 3C.03020 [Added March 2009]).
 - *Carcinogenic Potency Factor (CPF)* - a measure of the cancer-causing potency of a substance estimated by the upper 95 percent confidence limit of the slope of a straight line calculated by the Linearized Multistage Model, or other appropriate model, according to U.S. Environmental Protection Agency (USEPA) Guidelines (Federal Register (FR) 51 (185): 33992 - 34003; and FR 45 (231 Part V): 79318 - 79379) (15A NCAC 2B.0208) [Citation Revised March 2007].
 - *Casing* - pipe or tubing constructed of specified materials and having specified dimensions and weights as specified in the rules of this Supchapter, that is installed in a borehole, during or after completion of the borehole, to support the side of the hole and thereby prevent caving, to allow completion of a well, to prevent formation material from entering the well, to prevent the loss of drilling fluids into permeable formations, and to prevent entry of undesirable water (15A NCAC 2C.0102) [Revised March 2010].
 - *Catastrophic Collapse* - the sudden and utter failure of overlaying strata caused by removal of underlying materials (15A NCAC 2C.0204).
 - *Certificate of Completion* - a certification by the Department that a private drinking water well has been constructed or repaired in compliance with the construction permit or repair permit (15A NCAC 3C.03020 [Added March 2009]).
 - *Certified Operator* - any holder of a certificate issued by the Board in accordance with the provisions of G.S. 90A-20 to -29 (15A NCAC 18D.0105).
 - *Commission* - the North Carolina Environmental Management Commission or its successor (15A NCAC 2B.0403).
 - *Community Water System* - a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents (15A NCAC 18C.0102 incorporating 40 CFR 141.2 by reference) [Added March 1998].
 - *Confining Zone* - a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above or below an injection zone (15A NCAC 2C.0204).
 - *Consolidated Rock* - rock that is firm and coherent, solidified, or cemented, such as granite, gneiss, limestone, slate, or sandstone, that has not been decomposed by weathering (15A NCAC 2C.0102).
 - *Construction of Wells* - all acts necessary to construct wells for any intended purpose or use, including the location and excavation of the well, placement of casings, screens and fittings, development and testing (15A NCAC 3C.03020 [Added March 2009]).
 - *Construction Permit* - a well construction permit issued by the Department authorizing or allowing the construction of any private drinking water well as defined in the rules of this Section (15A NCAC 3C.03020 [Added March 2009]).
 - *Contaminant* - any physical, chemical, biological, or radiological substance or matter which, if injected, may cause a violation of any water quality standard in 15 NCAC 02L and/or adversely affect the health of humans (15A NCAC 2C.0204).

- *Contaminate or Contamination* - the introduction of foreign materials of such nature, quality, and quantity into the groundwaters as to exceed the groundwater quality standards specified in 15A NCAC 02L (Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina) (15A NCAC 2C.0102) [Revised March 2010].
- *Critical Area* - the area adjacent to a water supply intake or reservoir where risk associated with pollution is greater than from remaining portions of the watershed. The critical area is defined as extending either 1/2 mi from the normal pool elevation of the reservoir in which the intake is located or to the ridge line of the watershed (whichever comes first); or 1/2 mi upstream from and draining to the intake (or other appropriate downstream location associated with the water supply) located directly in the stream or river (run-of-the-river), or to the ridge line of the watershed (whichever comes first). Since WS-I watersheds are essentially undeveloped, establishment of a critical area is not required. Local governments may extend the critical area as needed. Major landmarks such as highways or property lines may be used to delineate the outer boundary of the critical area if these landmarks are immediately adjacent to the appropriate outer boundary of 1/2 mi. The Commission may adopt a different critical area size during the reclassification process (15A NCAC 2B.0202) [Citation Revised March 2007].
- *Cross-connection* - include the following:
 1. any physical connection between a potable water supply system and any other piping system, sewer fixture, container, or device, whereby water or other liquids, mixtures, or substances may flow into or enter the potable water supply system;
 2. any potable water supply outlet which is submerged or is designed or intended to be submerged in non-potable water or in any source of contamination or;
 3. an air gap, providing a space between the potable water pipe outlet and the flood level rim of a receiving vessel of less than twice the diameter of the potable water pipe (15A NCAC 18C.0102) [Added March 1998].
- *Department* - North Carolina Department of Environment, Health, and Natural Resources (15A NCAC 2C.0103).
- *Department of Environment and Natural Resources or Department* - the North Carolina Department of Environment and Natural Resources. The term also means the authorized representative of the Department. For the purposes of any notices required pursuant to the rules of this Section, notice shall be mailed to "Division of Environmental Health, On-Site Water Protection Section, North Carolina Department of Environment and Natural Resources," 1642 Mail Service Center, Raleigh, NC 27699-1642 (15A NCAC 3C.03020 [Added March 2009]).
- *Designated Nonpoint Source Agency* - those agencies specified by the Governor in the North Carolina Nonpoint Source Management program, as approved by the USEPA (15A NCAC 2B.0202).
- *Designed Capacity* - capacity that is equal to the rate of discharge or yield that is specified by the well owner or his agent prior to construction of the well (15A NCAC 2C.0102) [Revised March 2010].
- *Director* - the Director of the Division of Environmental Management, Department of Natural Resources and Community Development (15A NCAC 2B.0403).
- *Discharge* - the addition of any man-induced waste effluent either directly or indirectly to state surface waters (15A NCAC 2B.0202).
- *Division* - for water quality requirements, North Carolina Division of Environmental Health (15A NCAC 2C.0107). For well and water use requirements, the North Carolina Division of Environmental Management (15A NCAC 2C.0102).

- *Domestic Use* - water used for drinking, bathing, or other household purposes, livestock, or gardens (15A NCAC 2C.0102) [Revised March 2010].
- *Effluent Channel* - a discernible confined and discrete conveyance which is used for transporting treated wastewater to a receiving stream or other body of water as provided (15A NCAC 2B.0202).
- *Facility* - defined as any individual operational unit or a combination of operational units that a public water system uses in the treatment or distribution of drinking water (15A NCAC 18C.1301) [Added March 2010].
- *Fault* - a surface or zone of rock fracture along which there has been displacement (15A NCAC 2C.0204).
- *Fishing* - the taking of fish by sport or commercial methods, as well as the consumption of fish or shellfish or the propagation of fish and such other aquatic life as is necessary to provide a suitable environment for fish (15A NCAC 2B.0202).
- *Flow Rate* - the volume per unit time of a fluid which emerges from an orifice, pump, turbine or passes along a conduit or channel (15A NCAC 2C.0204).
- *Fluid* - a material or substance which flows or moves; whether in a semisolid, liquid, sludge, gas, or any other form or state (15A NCAC 2C.0204).
- *Formation Fluid* - fluid present in a formation under natural conditions as opposed to introduced fluids, such as drilling mud and grout (15A NCAC 2C.0204).
- *Freshwater* - all waters that under natural conditions would have a chloride ion content of 500 mg/L or less (15A NCAC 2B.0202).
- *Generator* - any person, by site location, whose act or process produces hazardous waste (15A NCAC 2C.0204).
- *Groundwater* - those waters in the saturated zone of the water-bearing consolidated and unconsolidated formations (15A NCAC 2C.0204).
- *Grout* - means a material approved in accordance with Rule .0107(e) of this Section for use in sealing the annular space of a well or liner or for sealing a well during abandonment (15A NCAC 2C.0102) [Revised March 2010].
- *Hazardous Waste* - any solid, semisolid, liquid, or contained gaseous waste or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristic may (15A NCAC 2C.0204):
 1. cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness
 2. pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of or otherwise managed.
- *Injection* - emplacement into the subsurface of a solid or fluid substance or material, except drilling fluids, grout used in association with well construction or abandonment, and fluids used in connection with well development, rehabilitation, or stimulation (15A NCAC 2C.0204).
- *Injection Wells* - any excavation which is cored, bored, drilled, jetted, dug, or otherwise constructed, whose depth is greater than its largest surface dimension and which is used, or intended to be used for the injection of fluids or solids into the subsurface or groundwaters (15A NCAC 2C.0204). Included are the following classifications (15A NCAC 2C.0209):
 1. Class I - this class applies to industrial, municipal, and nuclear disposal wells that inject wastes below the lowermost formation containing an underground source of drinking water and includes both:

- a. wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to inject hazardous waste, other than Class IV wells
 - b. other industrial and municipal waste disposal wells
 2. Class II - this class applies to oil and gas production and storage related injection wells and includes wells which inject fluids and meet all of the following conditions:
 - a. the fluids are brought to the surface in connection with conventional oil or natural gas production
 - b. fluids are injected for enhanced recovery of oil or natural gas
 - c. the well is for storage of hydrocarbons which are liquid at standard temperature and pressure
 3. Class III - this class applies to special process wells which inject for extraction of minerals or energy and includes:
 - a. mining of sulfur by the Frasch process
 - b. in-situ production of uranium or other metals (this category includes only in-situ production from ore bodies which have not been conventionally mined. Solution mining of conventional mines, such as stopes leaching, is included in Class V)
 - c. solution mining of salts or potash
 - d. in-situ combustion of fossil fuel (fossil fuels includes coal, tar sands, oil shale, and any other fossil fuel which can be mined by this process)
 - e. recovery of geothermal energy to produce electric power (class III wells include the recovery of geothermal energy to produce electric power but do not include wells used in heating or aquaculture, which are Class V)
 4. Class IV - this class applies to injection wells that inject hazardous wastes into or above a formation containing an underground source of drinking water and includes wells used by:
 - a. generators of hazardous wastes or radioactive wastes
 - b. owners or operators of hazardous waste management facilities, or radioactive waste disposal sites
 5. Class V - this class applies to all injection wells not included in Class I, II, III, and IV and includes:
 - a. air conditioning return flow wells used to inject the water used for heating or cooling in a heat pump
 - b. cesspools or other devices that receive wastes which have an open bottom and sometimes have perforated sides
 - c. cooling water return flow wells used to inject water previously used for cooling
 - d. drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation
 - e. dry wells used for the injection of wastes into a subsurface formation
 - f. recharge wells used to replenish the water in an aquifer
 - g. salt water intrusion barrier wells used to inject water into fresh water aquifer to prevent the intrusion of salt water into the fresh water
 - h. sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings, or other solids into subsurface mines, whether or not the mixture is radioactive
 - i. septic system wells used to inject the waste or effluent from a septic tank or cesspool
 - j. subsidence control wells used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water
 - k. wells used for the storage of hydrocarbons which are gases at standard temperature and pressure
 - l. geothermal wells used in heating and aquaculture
 - m. radioactive waste disposal wells other than Class IV
 - n. wells used for solution mining of ores or minerals in conventional mines, such as stopes leaching
 - o. wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts
 - p. injection wells used in experimental technologies.
- *Injection Zones* - a geological formation, group of formations, or part of a formation receiving fluids through a well (15A NCAC 2C.0204).
 - *Local Health Department* - the county or district health department or its successor (15A NCAC 3C.03020 [Added March 2009]).
 - *Monitoring Well* - any well constructed for the primary purpose of obtaining samples of groundwater or other liquids for examination or testing, or for the observation or measurement of groundwater levels. This definition excludes lysimeters, tensiometers, and other devices used to investigate the characteristics of the unsaturated

zone but includes piezometers, a type of monitoring well constructed solely for the purpose of determining groundwater levels (15A NCAC 2C.0102) [Revised March 2010].

- *Non-community Water System* - a public water system that is not a community water system (15A NCAC 18C.0102 incorporating 40 CFR 141.2 by reference) [Added March 1998].
- *Non-transient Non-community Water System* or *NTNCWS* - a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 mo/yr (15A NCAC 18C.0102 incorporating 40 CFR 141.2 by reference) [Added March 1998].
- *Operator* - referenced in Section .1300 shall hold a valid certificate issued by the North Carolina Water Treatment Facility Operators Certification Board. An "Operator in Responsible Charge (ORC)" designated for each facility shall hold a grade of certification corresponding to or higher than the classification of the facility (15A NCAC 18C.1301) [Added March 2010].
- *Operator in Responsible Charge* - the individual designated by the person owning or controlling the system as the certified operator of record of the system who has primary responsibility for the operation of such system as defined in G.S. 90A-46 and applicable rules of the Water Pollution Control System Operators Certification Commission (15A NCAC 18A.1935) [Revised March 2007].
- *Owner* - any person who holds the fee or other property rights in the well being constructed. [Note: Absent a contrary agreement in writing, the Department will presume that the well owner and the land owner are the same person.] (15A NCAC 2C.0102) [Added March 2010].
- *Person* - all persons, including individuals, firms, partnerships, associations, public or private institutions, municipalities or political subdivisions, governmental agencies, or private or public corporations organized or existing under the laws of this State or any other state or country (15A NCAC 3C.03020 [Added March 2009].
- *Pitless Adapters* or *Pitless Units* - devices specifically manufactured to the standards specified under 15A NCAC 2C.0107(i)(5) for the purpose of allowing a subsurface lateral connection between a well and plumbing appurtenances (15A NCAC 2C.0102).
- *Plat* - a property survey prepared by a registered land surveyor, drawn to a scale of one inch equals no more than 60 feet, that includes: the specific location of all structures and proposed structures and appurtenances, including but not limited to decks, porches, pools, driveways, out buildings, existing and proposed wastewater systems, existing and proposed wells, springs, water lines, surface waters or designated wetlands, easements, including utility easements, and existing or proposed chemical or petroleum storage tanks above or below ground. "Plat" also means, for subdivision lots approved by the local planning authority and recorded with the county register of deeds, a copy of the recorded subdivisions plat that is accompanied by a site plan that is drawn to scale (15A NCAC 3C.03020 [Added March 2009].
- *Plugging* - the act or process of stopping the flow of fluids into or out of a formation through a borehole or well penetrating that formation (15A NCAC 2C.0204).
- *Potable Water* - those waters that are suitable for drinking, culinary, or food processing purposes (15A NCAC 2C.0204).
- *Pressure* - the total load or force per unit area acting on a surface (15A NCAC 2C.0204).
- *Primary Nursery Areas (PNAs)* - tidal saltwaters that provide essential habitat for the early development of commercially important fish and shellfish and are so designated by the Marine Fisheries Commission (15A NCAC 2B.0202).
- *Primary Recreation* - swimming, skin diving, skiing, and similar uses involving human body contact with water whom such activities take place in an organized or on a frequent basis (15A NCAC 2B.0202).

- *Public Water System* - a water system as defined in 15A NCAC 18C (15A NCAC 2C.0102).
- *Pumps and Pumping Equipment* - any equipment or materials utilized or intended for use in withdrawing or obtaining ground-water including well seals (15A NCAC 3C.03020 [Added March 2009]).
- *Recovery Well* - any well constructed for the purpose of removing contaminated groundwater or other liquids from the subsurface (15A NCAC 2C.0102).
- *Repair* - work involved in deepening, reaming, sealing, installing or changing casing depths, perforating, screening, or cleaning, acidizing or redevelopment of a well excavation, or any other work which results in breaking or opening the well seal (15A NCAC 3C.03020 [Added March 2009]).
- *Repair Permit* - a well repair permit issued by the Department authorizing or allowing the repair of any private drinking water well as defined in the rules of this Section (15A NCAC 3C.03020 [Added March 2009]).
- *Saline* - having a chloride concentration of more than 250 milligrams per liter (15A NCAC 2C.0102) [Added March 2010].
- *Secondary Recreation* - wading, boating, other uses not involving human body contact with water, and activities involving human body contact with water where such activities take place on an infrequent, unorganized, or incidental basis (15A NCAC 2B.0202).
- *Service Connection* - a water tap made to provide a water connection to the water distribution system (15A NCAC 18D.0105).
- *Settleable Solids* - the volume of solid particles in a well-mixed 1 L sample which will settle out of suspension, in the bottom of an Imhoff Cone, after 1 h (15A NCAC 2C.0102).
- *Shellfish Culture* - the use of waters for the propagation, storage, and gathering of oysters, clams, and other shellfish for market purposes (15A NCAC 2B.0202).
- *Site* - the land or water area where any facility, activity or situation is physically located, including adjacent or other land used in connection with the facility, activity or situation (15A NCAC 2B.0202) [Added March 2010].
- *Site Plan* - a drawing not necessarily drawn to scale that shows the existing and proposed property lines with dimensions, and the specific location of all structures and proposed structures and appurtenances, including decks, porches, pools, driveways, out buildings, existing and proposed wastewater systems, existing and proposed wells, springs, water lines, surface waters or designated wetlands, easements, including utility easements, and existing or proposed chemical or petroleum storage tanks above or below ground (15A NCAC 3C.03020 [Added March 2009]).
- *Source of Water Supply for Drinking, Culinary, or Food-Processing Purposes* - any source, either public or private, the waters from which are used for human consumption, or used in connection with the processing of milk, beverages, food, or other purpose which requires water suitable for human consumption (15A NCAC 2B.0202).
- *Specific Capacity* - the yield of the well expressed in gal per minute per foot of draw-down of the water level (gpm/ft.-dd) (15A NCAC 2C.0102).
- *Static Water Level* - the level at which the water stands in the well when the well is not being pumped and is expressed as the distance from a fixed reference point to the water level in the well (15A NCAC 2C.0102).
- *Subsidence* - the lowering of the natural land surface in response to: earth movements; reduction of formation fluid pressure; removal of underlying supporting material by mining or solution of solids, either artificially or

from natural causes; compaction due to wetting (Hydrocompaction); oxidation of organic matter in soils; or added load on the land surface (15A NCAC 2C.0204).

- *Suspended Solids* - the weight of those solid particles in a sample which are retained by a standard glass microfiber filter, with pore openings of 1 1/2 microns, when dried at a temperature between 103 and 105 deg F (15A NCAC 2C.0102) [Revised March 2010].
- *Swamp Waters* - those waters which are classified by the Environmental Management Commission and which are topographically located so as to generally have very low velocities and other characteristics that are different from adjacent streams draining steeper topography. They are designated by "Sw" following the water classification (15A NCAC 2B.0202).
- *Temporary Well* - a monitor well, or a well that is constructed to determine aquifer characteristics, and which will be properly abandoned or converted to a permanent well within 7 days (168 h) of the completion of drilling of the borehole (15A NCAC 2C.0102) [Revised March 2010].
- *Tidal Salt Waters* - all tidal waters that are classified by the Environmental Management Commission which generally have a natural chloride ion content in excess of 500 ppm and include all waters assigned S classifications (15A NCAC 2B.0202).
- *Toxic Substance* or *Toxicant* - any substance or combination of substances (including disease-causing agents), which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, has the potential to cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions or suppression in reproduction or growth) or physical deformities in such organisms or their offspring (15A NCAC 2B.0202).
- *Trout Waters* - those waters that have conditions which sustain and allow for trout propagation and survival of stocked trout on a year-round basis. These waters are classified by the Commission after considering the requirements of Rule .0101(b) and (c) of 15A NCAC 2B and include all waters designated by "Tr" in the water classification (15A NCAC 2B.0202).
- *Turbidity* - the cloudiness in water, due to the presence of suspended particles such as clay and silt that may create esthetic problems or analytical difficulties for determining contamination (15A NCAC 2C.0102) [Revised March 2010].
- *Underground Sources of Drinking Water* - any groundwater source (15A NCAC 2C.0204).
- *Water Supply System* - pump and pipe used in connection with or pertaining to the operation of a private drinking water well including pumps, distribution service piping, pressure tanks and fittings (15A NCAC 3C.03020 [Added March 2009]).
- *Watershed* - the entire land area contributing surface drainage to a specific point. For the purpose of the water supply protection rules in 15A NCAC 2B.104 and .0211, local governments may use major landmarks such as highways or property lines to delineate the outer boundary of the drainage area if these landmarks are immediately adjacent to the ridgeline (15A NCAC 2B.0202).
- *Well* - any excavation that is cored, bored, drilled, jetted, dug, or otherwise constructed for the purpose of locating, testing, developing, draining, or recharging any groundwater reservoirs or aquifer, or that may control, divert, or otherwise cause the movement of water from or into any aquifer. Provided, however, this does not include a well constructed by an individual on land which is owned or leased by him, appurtenant to a single-family dwelling, and intended for domestic use (including household purposes, farm livestock or gardens) (15A NCAC 2C.0102).
- *Well Capacity* - the maximum quantity of water that a well will yield continuously (15A NCAC 2C.0102).

- *Well Contractor Activity* - the construction, installation, repair, alteration or abandonment of any well (15A NCAC 3C.03020 [Added March 2009]).
- *Well Contractor* - any person in trade or business who undertakes to perform a well contractor activity or who undertakes to personally supervise or personally manage the performance of a well contractor activity on the person's own behalf or for any person, firm, or corporation in accordance with the well contractor certification requirements of 15A NCAC 27 (15A NCAC 3C.03020 [Added March 2009]).
- *Well Head* - the upper terminal of the well including adapters, ports, valves, seals, and other attachments (15A NCAC 2C.0102).
- *Well Seal* - an approved arrangement or device used to cap a well or to establish and maintain a junction between the casing or curbing of a well and the piping or equipment installed therein, the purpose or function of which is to prevent pollutants from entering the well at the upper terminal (15A NCAC 3C.03020 [Added March 2009]).
- *Well System* - two or more wells connected to the same distribution or collection system or, if not connected to a distribution or collection system, two or more wells serving the same site (15A NCAC 2C.0102) [Revised March 2010].
- *Yield* - the volume of water or other fluid per time that can be discharged from a well under a given set of circumstances (15A NCAC 2C.0102) [Added March 2010].

**WATER QUALITY MANAGEMENT
GUIDANCE FOR NORTH CAROLINA CHECKLIST USERS**

REFER TO CHECKLIST ITEMS:

Missing Checklist Items	WQ.2.1.NC.
State Specific	
Operators	WQ.6.1.NC.through WQ.6.3.NC.
Operations	WQ.8.1.NC. and WQ.8.2.NC.
Public Water Systems	
General	WQ.10.1.NC. through WQ.10.6.NC.
Monitoring/Sampling	WQ.15.1.NC. and WQ.15.2.NC.
Disinfection and Filtration	WQ.20.1.NC. through WQ.20.9.NC.
Lead and Copper	WQ.25.1.NC.
Notification and Reporting Requirements	WQ.30.1.NC. through WQ.30.4.NC.
Community Water Systems	
Standards	WQ.35.1.NC. through WQ.35.8.NC.
Monitoring/Sampling	WQ.40.1.NC. through WQ.40.4.NC.
Notification and Reporting Requirements	WQ.45.1.NC. through WQ.45.5.NC.
Lead and Copper	WQ.50.1.NC.
Noncommunity Water Systems	
Standards	WQ.60.1.NC. through WQ.60.4.NC.
Monitoring/Sampling	WQ.65.1.NC.
Notification and Reporting Requirements	WQ.75.1.NC.
Nontransient, Noncommunity Water Systems	
Standards	WQ.76.1.NC. and WQ.76.5.NC.
Monitoring/Sampling	WQ.77.1.NC. and WQ.77.3.NC.
Notification and Reporting Requirements	WQ.79.1.NC. through WQ.79.3.NC.
Drinking Water Well	WQ.90.1.NC. through WQ.90.22.NC.
Miscellaneous Wells	WQ.100.1.NC. and WQ.100.9.NC.
Underground Injection Control (UIC)	
All Wells	WQ.109.1.NC. through WQ.109.4.NC.
Class V Wells	WQ.114.1.NC. through WQ.114.7.NC.
Water Quality Standards	WQ.115.1.NC. through WQ.115.8.NC.
Water Use	WQ.120.1.NC. through WQ.120.13.NC.

GUIDANCE FOR APPENDIX USERS

REFER TO APPENDIX NUMBERS:	REFER TO APPENDIX TITLES:
13-1	Separation Distances Between Water Supply Wells and Sources of Contamination
13-2	Designated Areas Where Wells May Be Cased to Less than 20 Ft
13-3	Designated Areas Where Wells May Be Cased to a Minimum Depth of 35 Ft
13-4	Minimum Wall Thickness for Casing of Water Wells
13-5	Maximum Allowable Depths (in ft) of Installation of Thermoplastic Water Well Casings
13-6	Water Classifications
13-7	Water Quality Standards for Carcinogens
13-8	Fresh Surface Water Quality Standards for Class C Waters
13-9	Tidal Salt Water Quality Standards for Class SC Waters
13-10	Tidal Salt Water Quality Standards for Class SA Waters
13-11	Tidal Salt Water Quality Standards for Class SB Waters
13-12	Water Quality Standards for Class WS-I Waters, Class WS-II Waters, Class WS-III Waters, Class WS-IV Waters, and Class WS-V Waters
13-13	Fresh Surface Water Quality Standards for Class B Waters
13-14	[Deleted March 2004]
13-15	[Deleted March 2004]
13-16	Groundwater Classifications
13-17	Default Water Use Reduction Measures During Extreme and Exceptional Drought Designations
13-18	Standard Frequency of Oversight Visits for Ground Water and Supplemental Treatment Facilities

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<p>WQ.2.</p> <p>MISSING CHECKLIST ITEMS</p> <p>WQ.2.1.NC. Federal facilities are required to comply with all applicable state regulatory requirements not contained in this checklist (a finding under this checklist item will have the citation of the applied regulation as a basis of finding).</p>	<p>Determine whether any new regulations have been issued since the finalization of the manual.</p> <p>Determine whether the Federal facility has activities or facilities that are regulated but not addressed in the checklists.</p> <p>Verify that the Federal facility is in compliance with all applicable and newly issued regulations.</p>

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<p>2007].</p> <p>WQ.6.4.NC. Operators in charge of a public water system must meet specific requirements (15A NCAC 18C.1301) [Added March 2010].</p>	<p>operation and maintenance of the facility and does not reside more than 50 miles from the facility without written permission from the Board.</p> <p>Verify that the operator in responsible charge is readily available for consultation on the premises of the facility in case of an emergency, malfunction or breakdown of equipment or other needs.</p> <p>Verify that no person is in responsible charge of more than any one of the following without written permission from the Board:</p> <ul style="list-style-type: none"> - a surface water treatment facility - 5 community public water systems with well water facilities - 10 non-community public water systems with well water facilities - a distribution system serving over 3,300 service connections - 5 distribution systems serving over 500 service connections and less than 3,300 service connections - 10 total distribution systems - 10 total cross-connection control systems. <p>Verify that no person is in responsible charge of any combination of a surface water treatment facility, a community public water system with well water facilities, a non-community public water system with well water facilities, a distribution system, and a cross-connection control facility without written permission from the Board.</p> <p>Verify that, if an operator in responsible charge takes responsibility for an additional system or relinquishes responsibility for any system, the operator notifies the Board in writing within 30 days of this change.</p> <p>Verify that the operator in responsible charge establishes standard operating procedures for each facility for which he/she is responsible.</p> <p>Verify that the procedures instruct persons lacking proper certification to refer all such decisions affecting public health to the certified operator on duty or to the operator in responsible charge.</p> <p>Verify that the ORC or certified treatment facility operator working under the direction of the ORC is familiar with the entire water system, including the chlorinators, piping and other appurtenances pertaining to the operation of the treatment plant and the distribution system.</p> <p>(NOTE: The collection of distribution system samples and field measurements required on monthly operation reports, including residual disinfectant testing in the distribution system may be performed by a person under the ORC's direction.)</p> <p>Verify that the standard operating procedures plan including procedures for sampling and for performing residual disinfectant tests and other field</p>

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	<p>measurements is followed.</p> <p>Verify that, in order to report low residual disinfectant test readings or other problems, the designee, at all times, is able to contact the ORC or certified operator working under the direction of the ORC, who takes corrective action as needed to keep the system in compliance.</p>

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<p>STATE-SPECIFIC REQUIREMENTS</p> <p>WQ.8. Operations</p> <p>WQ.8.1.NC. Water suppliers must meet facility oversight requirements (15A NCAC 18C.1303) [Added March 2010].</p>	<p>Verify that, at a minimum, the supplier of water ensures the following requirements are met during each oversight visit:</p> <ul style="list-style-type: none"> - a routine visual inspection is conducted from the source to the point where water enters the distribution system - equipment settings are adjusted and chemical feed tanks are filled as necessary - dates and quantities of chemicals added are recorded - the physical and chemical tests required on plant monthly operation reports are performed. <p>Verify that an Operator in Responsible Charge (ORC), or a certified treatment facility operator working under the direction of the ORC, is on site as frequently as necessary to ensure compliance with these requirements.</p> <p>Verify that, at least one visit per week, is performed by the ORC for the treatment facility or by an operator with a grade of certification corresponding to or higher than the classification of the facility.</p> <p>Verify that surface water or GWUDI systems provide an operator and have the ORC or an operator with a grade of certification corresponding to or higher than the classification of the facility on-site at least 20 percent of the time the facility is in operation, as calculated on a weekly basis.</p> <p>Verify that ground water treatment facilities with any individual parameter rating value of 10 or higher are visited by an operator daily.</p> <p>Verify that ground water treatment facilities with all individual parameter rating values less than 10 are visited by an operator as often as necessary to ensure compliance with the requirements of this Subchapter but no less often than denoted in Appendix 13-18.</p> <p>(NOTE: A supplemental treatment facility, including booster chlorination, is a facility designed to treat water that has previously been treated to meet standards of the "North Carolina Drinking Water Act.")</p> <p>Verify that a supplemental treatment facility with any individual parameter rating value of 10 or higher is visited by an operator daily.</p> <p>Verify that supplemental treatment facilities with all individual parameter rating values less than 10 are visited by an operator as often as necessary to ensure compliance with the requirements of this Subchapter but no less often than</p>

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<p>WQ.8.2.NC. Water distribution systems using disinfectants or other chemicals for the treatment of water must meet testing requirements during oversight visits (15A NCAC 18C.1302 (a)) [Added March 2010].</p>	<p>denoted in Appendix 13-18.</p> <p>Verify that, for the standard frequency of 3 times per week, no more than 2 consecutive days pass between operator oversight visits.</p> <p>Verify that, for the standard frequency of 2 times per week, no more than 3 consecutive days pass between operator oversight visits.</p> <p>Verify that distribution facilities are visited by the operator as frequently as necessary to operate the facility, provide emergency response and ensure compliance with the requirements of this Section and Subchapter.</p> <p>(NOTE: See 15A 18D.0203 for individual parameter rating values.)</p> <p>(NOTE: Oversight may be increased or decreased by the Department.)</p> <p>Verify that, when a public water system uses disinfectants or other chemicals for the treatment of water, residual disinfectant tests and other applicable required water quality tests are made during every required oversight visit to the facility.</p> <p>Verify that residual disinfectant concentrations are maintained and tested as follows:</p> <ul style="list-style-type: none"> - for systems providing treatment, residual disinfectant concentrations are measured in the water entering the distribution system by the operator during every required visit - residual disinfectant concentrations are measured weekly at locations that represent maximum residence time of the water in the distribution system or at other locations with high water age (locations designated on the sample siting plan). <p>Verify that, when ammonia and chlorine are applied disinfectants, the system measures analytical parameters pertinent to the operation as follows:</p> <ul style="list-style-type: none"> - for water entering the distribution system, parameters to be measured are, at a minimum, include total chlorine, monochloramine, free ammonia, and pH are performed daily, while the treatment facility is in operation - for water in the distribution system, parameters to be measured are, at a minimum, include total chlorine, monochloramine, free ammonia, and pH and are measured no less often than denoted: <ul style="list-style-type: none"> - system classification D, 1 sample per week - system classification C, 3 samples per week - systems classification A and B, 5 samples per week.

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PUBLIC WATER SYSTEMS WQ.10. General WQ.10.1.NC. Public water systems must use only certified laboratories to analyze required samples (15A NCAC 18C.1527). WQ.10.2.NC. A supplier of public water systems must meet specific requirements regarding additives to drinking water (15A NCAC 18C.1537(c) and (d)). WQ.10.3.NC. Water supply systems must meet specific requirements for water pipe materials (15A NCAC 18C.0406(a)). WQ.10.4.NC. Water supply systems must meet specific requirements regarding cross connections (15A NCAC	<p>Verify that required test samples are analyzed by a laboratory certified by the Division of Laboratory Services Laboratory Certification Branch.</p> <p>(NOTE: Measurements for turbidity, free chlorine residual, temperature, and pH may be performed by any person who has been instructed in the appropriate procedure by the Department or a certified laboratory. Measurements may also be performed by a person who holds a valid certificate issued by the North Carolina Water Treatment Facility Operators Board of Certification.)</p> <p>Verify that the supplier maintains a list of all water supply products used in a public water system for inspection by the Department.</p> <p>Verify that, prior to using a product not previously listed, a supplier either determines the product is certified or notifies the Department of the type, name, and manufacturer of a product.</p> <p>Verify that a supplier does not willfully introduce or permit the introduction of a water supply product into a public water system, which does not meet these requirements.</p> <p>Verify that distribution mains are cast iron, ductile iron, asbestos-cement, reinforced concrete, plastic, or other material designed for potable water system service and meet appropriate American Water Works Association (AWWA) standards, section C, or NSF Standards No. 14 and No. 15 which are adopted by reference or approved equal standards.</p> <p>Verify that the pressure rating class of the pipe is in excess of the maximum design pressure within that section of the water distribution system.</p> <p>Verify that the quality of pipe to be used is stated in the project specifications.</p> <p>Verify that no potable water supply is connected by any means whatever to another source of water supply or to a storage facility, unless such connection has been previously approved by the Division.</p> <p>Verify that no connection is made to any plumbing system not complying with</p>

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<p>prevention (15A NCAC 18C.0709).</p> <p>WQ.10.6.NC. Water supply systems with dead-end water mains must meet specific requirements (15A NCAC 18C.0903).</p>	<p>Verify that sodium fluoride saturator tank make-up water lines have air gaps between the overflow rim of the tank and the water supply pipe of at least 4 in.</p> <p>Verify that, when using positive displacement fluoride chemical solution feed pumps, if the point of application to the water supply is at atmospheric pressure and is below the maximum elevation of the solution in the fluoride solution tank, an air gap is installed in the fluoride discharge line at a point above the liquid level in the tank.</p> <p>Verify that, if the point of application is a pressure line, then a pressure type vacuum breaker is used.</p> <p>Verify that either a nonpressure type vacuum breaker is installed on the atmospheric side of the last control valve of each agitator, or pressure type vacuum breaker or an approved backflow preventer is installed on the pipe line supplying only the agitators.</p> <p>Verify that, where installation of dead-end water mains cannot be avoided, a hydrant or a valve of adequate size for flushing is installed at the terminal end of the line.</p> <p>Verify that the flush valves have an aboveground discharge and are protected from contamination.</p>

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<p>PUBLIC WATER SYSTEMS</p> <p>WQ.15. Monitoring/ Sampling</p> <p>WQ.15.1.NC. Suppliers of water for public water systems that use water obtained in whole or in part from surface sources must meet turbidity sampling and analysis requirements (15A NCAC 18C.1505 and 18C.1506) [Revised March 2003].</p> <p>WQ.15.2.NC. Public water systems using point-of-entry and other treatment devices to meet MCLs must meet specific requirements (15A NCAC 18C.1529) [Added March 1998].</p>	<p>Verify that the Federal turbidity and sampling requirements are met.</p> <p>Verify that the water supplier develops a monitoring plan and obtains Department approval of the plan before point-of-entry devices are installed.</p> <p>Verify that the approved plan provides health protection equivalent to central water treatment.</p> <p>(NOTE: Equivalent means that the water meets all MCLs and is of an acceptable quality similar to water distributed by a well operated central treatment plant.)</p> <p>Verify that the supplier operates and maintains the point-of-entry treatment system.</p> <p>Verify that, in addition to monitoring for VOCs, monitoring includes physical measurements and observations such as total flow treated and mechanical condition of the treatment equipment.</p> <p>Verify that effective technology is properly applied under a plan approved by the Department.</p> <p>Verify that every building connected to the system has a point-of-entry device installed, maintained, and adequately monitored.</p> <p>Verify that the rights and responsibilities of the public water system consumer are conveyed with title upon sale of property.</p> <p>Verify that public water systems do not use bottled water or point-of-use devices to achieve compliance with an MCL.</p> <p>(NOTE: Bottled water or point-of-use devices may be used on a temporary basis</p>

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	to avoid an unreasonable risk to health.)

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PUBLIC WATER SYSTEMS WQ.20. Disinfection and Filtration WQ.20.1.NC. [Deleted March 2010]. WQ.20.2.NC. [Deleted March 2010]. WQ.20.3.NC. Water supply systems supplying water from an unfiltered public water system must provide continuous disinfection of the water supply (15A NCAC 18C.1108.) WQ.20.4.NC. Water supply systems must disinfect storage tanks, distribution systems, and filters of new public water systems prior to use (15A NCAC 18C.1003 and 18C.1004).	<p>(NOTE: 15A NCAC 18C.1301 revised. See WQ.6.4.NC. and WQ.20.4.NC.)</p> <p>(NOTE: 15A NCAC 18C.1302 revised.)</p> <p>Verify that the water supply is continuously disinfected by means of chlorination or by other methods approved by the Commission for Health Services.</p> <p>Verify that equipment is provided to assure uninterrupted disinfection.</p> <p>Verify that, after flushing to remove sediment and other foreign matter and after testing for leaks, water supply systems disinfect water distribution systems, including storage tanks and water mains, through the following steps:</p> <ul style="list-style-type: none"> - a chlorine solution is added to and dispersed throughout the system in concentrations sufficient to produce a chlorine residual of at least 50 mg/L (or ppm) which remains in contact with interior surfaces of the system for 24 h - the water system is flushed with fresh water from an approved water source until the chlorine solution is dispelled - representative samples of the water are collected, and, if bacteriological tests of the samples indicate water quality is satisfactory, water mains and storage tanks may be placed in service. <p>(NOTE: In unusual situations when large volume tanks are involved and there is not sufficient water available to fill the tank or there is not available a suitable drainage area for the chlorinated water, an alternate disinfection procedure for tanks may be proposed. Such proposal must be submitted in writing to the Department.)</p> <p>Verify that, after filters have been thoroughly backwashed to remove dust, silt, and other foreign matter, the entire filter (including filter media, supporting material, and underdrain system) is disinfected by an application</p>

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<p>WQ.20.5.NC. Public water systems must meet specific requirements regarding residual disinfection concentrations (15A NCAC 18C.2002).</p>	<p>of a chlorine solution with a minimum concentration of 50 mg/L (or ppm).</p> <p>Verify that the solution is dispersed throughout the filter bed and remains in contact for a minimum of 24 h.</p> <p>(NOTE: For treatment equipment that cannot tolerate chlorine, alternate disinfection procedures as recommended by the equipment manufacturer may be used if equivalent to the disinfection procedure using chlorine.)</p> <p>Verify that, in addition to the requirements of 40 CFR 141.72(a)(3) and (4) concerning residual disinfectant concentration, the system meets the following requirements:</p> <ul style="list-style-type: none"> - when chlorine is the singular applied disinfectant: <ul style="list-style-type: none"> - the residual disinfectant concentration entering the distribution system is not less than 0.2 mg/L free chlorine - when ammonia and chlorine are applied disinfectants, the residual disinfectant concentration is not less than 2.0 mg/L as combined chlorine - when chlorine is the singular applied disinfectant: <ul style="list-style-type: none"> - the residual disinfectant in the distribution system is not less than 0.2 mg/L as free chlorine in more than 5 percent of the samples each month - when ammonia and chlorine are applied disinfectants, the residual disinfectant is not less than 2.0 mg/L as combined chlorine in more than 5 percent of the sample each month. <p>Verify that, in addition to the requirements of 40 CFR 141.72(b)(2) and (3), the system meets the following requirements:</p> <ul style="list-style-type: none"> - when chlorine is the singular applied disinfectant: <ul style="list-style-type: none"> - the residual disinfectant concentration entering the distribution system is not less than 0.2 mg/L free chlorine - when ammonia and chlorine are applied disinfectants, the residual disinfectant concentration is not less than 2.0 mg/L as combined chlorine - when chlorine is the singular applied disinfectant: <ul style="list-style-type: none"> - the residual disinfectant in the distribution system is not less than 0.2 mg/L as free chlorine in more than 5 percent of the samples each month - when ammonia and chlorine are applied disinfectants, the residual disinfectant is not less than 2.0 mg/L as combined chlorine in more than 5 percent of the samples each month.

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<p>WQ.20.6.NC. New public water supply systems must meet specific disinfection requirements (15A NCAC 18C.1001) [Added March 1998].</p>	<p>Verify that all interior surfaces of new potable water supply systems, including wells, filters, storage tanks and distribution lines are thoroughly disinfected by means of hypochlorite or chlorine solutions, after which bacteriological test samples shall be collected.</p> <p>Verify that, after disinfection, the water supply is not placed into service until bacteriological test results of representative water samples analyzed in an approved laboratory are found to be satisfactory.</p>
<p>WQ.20.7.NC. Public water systems must respond in writing to significant deficiencies in sanitary survey reports (15A NCAC 18C.2007) [Added March 2001; Revised March 2010].</p>	<p>Verify that the public water system respond to the State in writing to significant deficiencies outlined in sanitary survey reports no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.</p> <p>Verify that the public water system takes necessary steps to address significant deficiencies identified in sanitary survey reports if such deficiencies are within the control of the public water system and its governing body.</p> <p>(NOTE: A significant deficiency is a defect in a system's design, operation, or maintenance, as well as any failures or malfunctions of its treatment, storage, or distribution system that is causing or has the potential to cause the introduction of contamination into water delivered to customers.)</p> <p>(NOTE: The provisions of 40 CFR. 141, Subpart P -- Enhanced Filtration and Disinfection (Systems Serving 10,000 or More People) and Subpart T – enhanced Filtration and Disinfection (Systems Serving Fewer than 10,000 People) and the provisions of 40 CFR 141, Subpart W-Enhanced Treatment for Cryptosporidium are hereby incorporate by reference including any subsequent amendments and editions.)</p>
<p>WQ.20.8.NC. Residual disinfection requirements systems must be met (15A NCAC 18C.2004) [Added March 2010].</p>	<p>(NOTE: The provisions of 40 C.F.R. 141.74 are hereby adopted by reference including subsequent amendments and editions with the following exceptions.)</p> <p>Verify that the residual disinfectant concentration of the water entering the distribution system is monitored continuously, and the lowest value is recorded each day.</p> <p>Verify that, if there is a failure in the continuous monitoring equipment, grab sampling every 4 hours is conducted in lieu of continuously monitoring, but for no more than five working days following the failure of the equipment.</p> <p>(NOTE: Systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequency</p>

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<p>WQ.20.9.NC. A public water system that uses ground water including a consecutive system receiving finished ground water must meet residual disinfectant requirements (15A NCAC 18C.2201) [Added March 2010].</p>	<p>of every four hours that water is being treated.)</p> <p>Verify that, as in 40 C.F.R. 141.74, "0.2 mg/l" of residual disinfectant concentration is replaced with 0.2 mg/l measured as free chlorine when chlorine is the singular applied disinfectant and 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants.</p> <p>(NOTE: A ground water system is defined as any public water system that uses ground water including a consecutive system receiving finished ground water. A ground water system does not include public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under Subpart H.)</p> <p>Verify that systems providing chemical disinfection measure residual disinfectant concentrations.</p> <p>Verify that, for water entering the system, the residual disinfectant concentration is not less than 0.2 mg/l measured as free chlorine when chlorine is the singular applied disinfectant and is not less than 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants for more than 2 consecutive daily visits for systems that are collecting grab samples and not more than 4 hours for systems that perform continuous monitoring.</p> <p>Verify that, for water in the system at coliform sampling sites, residual disinfectant concentration is not less than 0.2 mg/l measured as free chlorine when chlorine is the singular applied disinfectant and is not less than 1.0 mg/l measured as total chlorine when ammonia and chlorine are applied disinfectants.</p> <p>Verify that, for water in the distribution system at maximum residence time sites, systems measure residual disinfectant concentrations at maximum residence time sites or at other locations with high water age.</p> <p>Verify that the residual disinfectant concentrations at these locations are at detectable levels as set forth and calculated in 40 CFR 141.72 (a) (4) and (b) (3).</p>

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<p>PUBLIC WATER SYSTEMS</p> <p>WQ.25. Lead and Copper</p> <p>WQ.25.1.NC. Pipe, pipe fittings, and solder or flux at public water systems must be lead free (15A NCAC 18C.0408) [Revised March 2003].</p>	<p>Verify that any pipe, pipe fitting, solder or flux used in the installation or repair of any public water system is lead free.</p> <p>(NOTE: Lead free means that solders and flux do not contain more than 0.2 percent lead, and pipes and pipe fittings do not contain more than 8.0 percent lead.)</p> <p>(NOTE: This requirement does not apply to leaded joints necessary for the repair of cast iron pipes.)</p>

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PUBLIC WATER SYSTEMS WQ.30. Notification and Reporting Requirements WQ.30.1.NC. The supplier of water must meet specific reporting requirements (15A NCAC 18C.1525) [Revised March 2003; Revised March 2007]. WQ.30.2.NC. [Deleted March 2003]. WQ.30.3.NC. [Deleted March 2010]. WQ.30.4.NC. Public water systems that use disinfectants or other chemicals must report oversight results monthly (15A NCAC 18C.1302(b)) [Added March 2010].	<p>(NOTE: The requirements of this Rule apply to all public water systems. The provisions of 40 C.F.R. 141.31 are hereby incorporated by reference including any subsequent amendments and editions.)</p> <p>(NOTE: When a certified laboratory analyzes a compliance sample for a supplier, the laboratory reports the results within required periods to both the Department and supplier or his designated representative. When a certified laboratory fails to report a compliance sample result, it is the responsibility of the supplier to report results to the Department.)</p> <p>Verify that, if the testing the laboratory fails to report to the Department, the water supplier reports to the Department.</p> <p>(NOTE: The provisions of 40 C.F.R. 141.33 (recordkeeping) are hereby incorporated by reference including any subsequent amendments and editions.)</p> <p>(NOTE: 15A NCAC 18C.1301 revised. See WQ.6.4.NC.)</p> <p>(NOTE: See WQ.8.1.NC. and WQ.8.2.NC.)</p> <p>Verify that test results are documented and reported monthly on forms and in a format provided by the Department and are signed by the ORC.</p> <p>Verify that the monthly report are submitted by the 10th day of the following month to the Public Water Supply Section.</p> <p>(NOTE: The forms and reports shall be in an electronic format provided by the Department for water systems owned or operated by local governments and all community water systems serving 1,000 or more service connections or 3,000 or more individuals, regardless of ownership, effective April 1, 2010. Community water systems serving less than 1,000 service connections and less than 3,000 individuals and all non-transient, non-community water systems shall report test results in an electronic format provided by the Department effective October 1, 2010. Requests for waivers shall be submitted in writing to the Department no less</p>

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	<p>than two months prior to the deadline.)</p> <p>Verify that records documenting compliance are retained on the premises of the water system for a minimum of 3 years.</p>

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COMMUNITY WATER SYSTEMS WQ.35. Standards WQ.35.1.NC. All community water systems must have an operating permit (15A NCAC 18C.2101). WQ.35.2.NC. [Moved February 1999]. WQ.35.3.NC. Surface water supplies may be used for community water systems if specific requirements are met (15A NCAC 18C.0201 and 18C.0202).	<p>Verify that any community water system has obtained and is in compliance with an operating permit.</p> <p>(NOTE: The requirements of this checklist item were added to WA.150.3.NC. in the <i>Wastewater Management</i> chapter; February 1999.)</p> <p>Verify that the water supply is derived from uninhabited wooded areas.</p> <p>Verify that the entire watershed is either owned or controlled by the supplier or is under the control of the Federal or state government.</p> <p>(NOTE: No such new water supply may be created except where the water system owner owns in its entirety the watershed from which the water will be obtained.)</p> <p>Verify that the water, after disinfection, is of potable quality as determined by bacteriological and chemical tests performed by a certified laboratory.</p> <p>Verify that the water source has a WS-I classification as established by the Environmental Management Commission and meets the quality standards for that classification.</p> <p>Verify that any surface water which is to receive treatment for removal of dissolved or suspended matter in order to be used for a public water system is obtained from a source meeting WS-I, WS-II, WS-III, WS-IV, or WS-V stream classification standards established by the Environmental Management Commission.</p> <p>Verify that the source is protected from sources of pollution as determined by a sanitary survey of the watershed made by an authorized representative of the Department.</p> <p>Verify that the source supply is sufficient in capacity to satisfy the anticipated needs of the users for the period of design.</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WQ.35.4.NC. [Deleted March 2010].</p>	<p>(NOTE: 15A NCAC 18C.1303 revised.)</p>
<p>WQ.35.5.NC. Community water treatment facilities must have an operator in responsible charge for the distribution portion (15A NCAC 18D.0206(c)) [Revised March 2005; Revised March 2010].</p>	<p>Verify that there is an operator in responsible charge for the distribution portion of community public water systems:</p> <p>(NOTE: A system serving 100 or fewer service connections is exempt from this requirement if the system has an operator in responsible charge as required in WQ.6.1.NC. A system which is classified as D-distribution only may use a state certified distribution, well or surface operator to meet the operator in responsible charge requirements.)</p>
<p>WQ.35.6.NC. Community water systems must meet specific requirements regarding fluoridation (15A NCAC 18C.1402, 18C.1404, 18C.1405, and 18C.1406).</p>	<p>Verify that fluoride is not added to a community water system until a formal application has been submitted to and written approval is granted by the Secretary of the Department.</p> <p>Verify that the application includes a resolution by the unit of local government or the governing body operating the community water system stating that the local board of health has approved the proposed fluoridation procedure.</p> <p>Verify that accurate feeding equipment is provided for applying fluoride.</p> <p>Verify that either gravimetric or volumetric dry-feed equipment or positive displacement liquid-feed equipment with accuracy within 5 percent is used.</p> <p>Verify that special precautions are taken to protect operators from inhaling fluoride dust when handling this chemical and while charging the hoppers of the feeders.</p> <p>Verify that dry feeders are equipped with dust collectors consisting of bag filters operating under positive air pressure and vented to outside air.</p> <p>Verify that each operator who handles fluoride is provided with his individual toxic dust respirator to be used only when handling the chemical.</p> <p>Verify that, when liquid or solution feed equipment is used, special precautions against siphonage and improper chemical mixing are provided after consultation with and approval by the Department.</p> <p>Verify that the treatment process results in the adjustment of fluoride ion (F) in the treated water to 1.0 mg/L.</p> <p>Verify that a water treatment plant operator with qualifications acceptable to the controlling health agencies conducts the necessary chemical analyses and supervises application of the fluoride.</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WQ.35.7.NC. Community water systems must meet specific requirements regarding iron concentrations (15A NCAC 18C.1511).</p>	<p>Verify that an adequate number of samples are collected and analyzed from points before and after fluoridation and from one or more points in the distribution system.</p> <p>(NOTE: The minimum number of control tests and the number of check samples to be collected and submitted to the Division of Laboratory Services are determined by the controlling health agencies in each instance.)</p> <p>(NOTE: Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by GS 130A-313(10), but do not serve 25 or more of the same persons more than 6 mo/yr, are exempt from these requirements.)</p> <p>Verify that a community water system with an iron concentration in excess of 0.30 mg/L provides treatment to control the water quality.</p> <p>(NOTE: Analysis of samples is made on an as needed basis determined by the Department.)</p>
<p>WQ.35.8.NC. Community water systems must meet specific requirements regarding manganese concentrations (15A NCAC 18C.1512).</p>	<p>(NOTE: Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by GS 130A-313(10), but do not serve 25 or more of the same persons more than 6 mo/yr, are exempt from these requirements.)</p> <p>Verify that a community water system with a manganese concentration in excess of 0.05 mg/L provides treatment to control the water quality.</p> <p>(NOTE: Analysis of samples is made on an as needed basis determined by the Department.)</p>

<p align="center">COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT North Carolina Supplement</p>	
<p align="center">REGULATORY REQUIREMENTS:</p>	<p align="center">REVIEWER CHECKS: March 2010</p>
<p>COMMUNITY WATER SYSTEMS</p> <p>WQ.40. Monitoring/Sampling</p> <p>WQ.40.1.NC. Suppliers of water for community water systems must meet specific requirements regarding monitoring for sodium (15A NCAC 18C.1509).</p> <p>WQ.40.2.NC. [Deleted March 2001]</p>	<p>(NOTE: Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by GS 130A- 313(10), but do not serve 25 or more of the same persons more than 6 mo/yr, are exempt from these requirements.)</p> <p>Verify that the supplier collects and analyzes one sample per plant at the entry point of the distribution system for determination of sodium concentration levels.</p> <p>Verify that samples are collected and analyzed annually for systems using surface water sources in whole or in part, and at least every 3 yr for systems using solely groundwater sources.</p> <p>(NOTE: The minimum number of samples taken is based on the number of treatment plants used by the system, except that multiple wells drawing raw water from a single aquifer may, with Department approval, be considered one treatment plant for determining the minimum number of samples.)</p> <p>Verify that the supplier reports to the Department results of the analyses for sodium within the first 10 days of the month following the month in which sample results were received, or within the first 10 days following the end of the required monitoring period as stipulated by the Department, whichever is first.</p> <p>Verify that, if more than annual sampling is required, the supplier reports the average sodium concentration within 10 days of the month following the month in which analytical results of the last sample used for the annual average was received.</p> <p>(NOTE: Analyses conducted to determine compliance with this requirement are made in accordance with methods adopted by the USEPA and codified as 40 CFR 141.41(d) which is hereby incorporated by reference including any subsequent amendments and editions.)</p> <p>(NOTE: 15A NCAC 18C.1513 now incorporates provisions of 40 CFR 141.30 by reference including any subsequent amendments and editions. Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by G.S. 130A-313(10), but do not serve 25 or more of the same persons more than 6 mo per yr are exempt from the provisions of 40</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WQ.40.3.NC. Community water systems serving a population of fewer than 10,000 individuals and which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process must analyze for TTHMs (15A NCAC 18C.1533).</p>	<p>CFR 141.30.)</p> <p>(NOTE: Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by GS 130A- 313(10), but do not serve 25 or more of the same persons more than 6 mo/yr, are exempt from these requirements.)</p> <p>(NOTE: The minimum number of samples required to be taken by the system is based on the number of treatment plants used, except that multiple wells drawing raw water from a single aquifer may, with Department approval, be considered one treatment plant for determining the minimum number of samples.)</p> <p>Verify that all samples taken within an established frequency are collected within a 24- h period.</p> <p>Verify that analyses for TTHMs are made as follows for all community water systems using surface water sources in whole or in part or using only groundwater sources:</p> <ul style="list-style-type: none"> - performed at quarterly intervals on at least one water sample taken at a location within the distribution system reflecting the maximum residence time of water in the system - results of all analyses per quarter are reported to the Department within 30 days of receipt of such results - if more than one analysis is performed, results of all analyses are arithmetically averaged - all samples collected are used in computation of the average, unless analytical results are invalidated for technical reasons. <p>(NOTE: The Department may reduce the monitoring.)</p> <p>Verify that compliance with MCLs (see 40 CFR 141.12) is determined based on a running annual average of quarterly samples collected by the system.</p> <p>Verify that, if the average of samples covering any 12-mo period exceeds the MCL, the supplier of water reports to the Department and notifies the public.</p> <p>Verify that quarterly monitoring after public notification continues until a monitoring schedule, as a condition to a variance, exemption, or enforcement action, becomes effective.</p> <p>Verify that, before a community water system makes any significant modifications to its existing treatment process to achieve compliance with 40 CFR 141.12, the system submits and obtains Department approval of a detailed plan setting forth its proposed modification and those safeguards it will implement to ensure the bacteriological quality of the drinking water</p>

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<p>WQ.40.4.NC. Community water systems serving fewer than 150 service connections must meet specific requirements regarding monitoring for inorganic and organic chemicals other than TTHMs (15A NCAC 18C.1516(b) and(c)).</p>	<p>served will not be adversely affected.</p> <p>Verify that each system complies with the provisions set forth in the Department- approved plan.</p> <p>Verify that, minimally, the plan requires the system modifying its disinfection practice to:</p> <ul style="list-style-type: none"> - evaluate the system for sanitary defects and evaluate source water for biological quality - evaluate existing treatment practices and consider improvements that will minimize disinfectant demand and optimize finished water quality throughout the distribution system - provide baseline water quality survey data of the distribution system, including results from monitoring for coliform and fecal coliform bacteria, fecal streptococci, standard plate counts at 35 °C and 20 °C, phosphate, ammonia nitrogen, and total organic carbon - require virus studies when source waters are heavily contaminated with sewage effluent - conduct additional monitoring to assure continued maintenance of optimal biological quality in finished water - consider inclusion in the plan of provisions to maintain an active disinfectant residual throughout the distribution system at all times during and after modification. <p>(NOTE: MCLs for trihalomethanes for a community water system or a nontransient, noncommunity water system serving fewer than 10,000 individuals takes effect one yr from the date the system begins quarterly sampling.)</p> <p>Verify that, to comply with monitoring requirements for inorganic and organic chemicals, the system takes a single water sample to be analyzed for inorganic and organic chemicals.</p> <p>(NOTE: Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by GS 130A-313(10), but do not serve 25 or more of the same persons more than 6 mo/yr, are exempt from this requirement.)</p>

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REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WQ.45.5.NC. Community water systems that intend to modify or expand operations must notify the Department (15A NCAC 18C.0301(a) and 18C.0309) [Added March 1998; Revised February 2000].</p>	<p>Verify that written notice, including submission of applicable plans, specifications and engineering reports, is submitted to the Department by any water source intending to construct, alter, or expand a community water system.</p> <p>Verify that no construction, alteration, or expansion of a water system is placed into service and no service connections made until the system has received Final Approval from the Department.</p> <p>(NOTE: Temporary approval may be granted by the Department for system alterations required to remedy an imminent hazard as determined by the Department.)</p>

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
COMMUNITY WATER SYSTEMS WQ.50. Lead and Copper WQ.50.1.NC. Community water systems must meet specific requirements regarding corrosion control and lead and copper monitoring (15A NCAC 18C.1507(a) and (d)).	<p>(NOTE: Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by GS 130A- 313(10), but do not serve 25 or more of the same persons more than 6 mo/yr, are exempt from these requirements, including the provisions of 40 CFR 141.42 and 141, Subpart I which are incorporated by reference.)</p> <p>Verify that the water system controls and adjusts the pH when the water has a pH below 6.5.</p> <p>Verify that the control and adjustment are approved by the Department.</p> <p>(NOTE: Most waters are corrosive in varying degrees at pH 6.5 and slightly above, and such waters may have pH adjustment.)</p>

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
NONCOMMUNITY WATER SYSTEMS WQ.60. Standards WQ.60.1.NC. Non-community water supply facilities must meet specific requirements when using springs as a water source (15A NCAC 18A.1720(b) and 18A.1723) [Added March 1998; Citation Revised March 2007]. WQ.60.2.NC. Non-community water supplies must be disinfected upon completion of construction, maintenance, repairs, pump installations, or a report of positive coliform sample (15A NCAC 18A.1720(b) and 18A.1724) [Added March 1998; Citation Revised March 2007]. WQ.60.3.NC. Certain sources are prohibited for the supply of drinking water (15A NCAC 18A.1720(b) and 18A.1728) [Added March 1998; Citation Revised March 2007].	<p>(NOTE: If the spring is serving an establishment on or before 1 July 1993, it is approved unless a violation is identified, in which case the spring complies with all requirements required of springs developed after 1 July 1993.)</p> <p>Verify that approved springs are not connected until compliance has been completed and the Department receives certification from an engineer licensed to practice in North Carolina that the spring has been constructed in accordance with the approved plans and specifications.</p> <p>Verify that a water supply is disinfected as follows:</p> <ul style="list-style-type: none"> - chlorine in sufficient quantities to produce a chlorine residual of at least 100 mg/ L is placed in the water supply - the chlorine solution is placed in the supply so as to come into contact with any water-contact parts and materials above the normal water level - the chlorine solution stands in the water supply for at least 24 h - the supply flows to waste until no disinfectant can be measured with a test kit <p>Verify that a spring enclosures are disinfected as follows:</p> <ul style="list-style-type: none"> - interior walls of the enclosure are washed or swabbed with a chlorine solution of at least 100 mg/L or greater of chlorine residual approved by the Department - the disinfectant is poured into the spring, the service pipe is plugged, and water is retained in the spring storage for at least 24 h, or disinfectant is fed into the spring continuously for at least 24 h - the spring flows to waste until no disinfectant can be measured with a test kit. <p>Verify that the following are not used as drinking water supplies:</p> <ul style="list-style-type: none"> - water supplies with the presence of fecal coliform bacteria - cisterns.

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<p>WQ.60.4.NC. Non-transient non-community water systems must have an operator in responsible charge for the distribution portion (15A NCAC 18D.0206(c)) [Added March 2005; Revised March 2010].</p>	<p>Verify that there is an operator in responsible charge for the distribution portion of non-transient non-community public water systems.</p> <p>(NOTE: A system serving 100 or fewer service connections is exempt from this requirement if the system has an operator in responsible charge as required in WQ.6.1.NC. A system which is classified as D-distribution only may use a state certified distribution, well or surface operator to meet the operator in responsible charge requirements.)</p>

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<p>NONCOMMUNITY WATER SYSTEMS</p> <p>WQ.65. Monitoring/ Sampling</p> <p>WQ.65.1.NC. The water quality of a new water supply must be tested and found to be safe prior to use (15A NCAC 18A.1720 (a), 18A.1725 (a), 18A.1726, and 18A.1727) [Added March 1998; Citation Revised March 2007].</p>	<p>Verify that 2 consecutive bacteriological water samples taken at least 48 hours apart are collected and submitted to the Division of Laboratory Services of the Department of Environment, Health, and Natural Resources or another certified laboratory for analysis under the following conditions:</p> <ul style="list-style-type: none"> - prior to the initial use of a water supply - after construction, maintenance, repairs, pump installation - a report of a positive coliform sample. <p>(NOTE: A water supply not deemed safe may be replaced by an emergency supply system for up to 3 mo provided the Public Water Supply Section approves the emergency supply system.)</p> <p>Verify that, if a water supply with a presence of total coliforms is used, the supply is continuously disinfected and a chlorine residual is maintained of at least 0.2 mg/L with equipment designed for this purpose.</p> <p>Verify that a certified operator operates any water supply using continuous disinfection.</p> <p>Verify that the operator provides a statement to the Department that a supply using continuous disinfection has a minimum chlorine residual of 0.2 mg/L and a chlorine contact time of at least 20 min.</p> <p>(NOTE: A disinfection device must not be used if fecal coliform bacteria are found.)</p>

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<p>NONCOMMUNITY WATER SYSTEMS</p> <p>WQ.75. Notification and Reporting Requirements</p> <p>WQ.75.1.NC. Noncommunity water systems that intend to modify or expand operations must notify the Department (15A NCAC 18C.0301(a) and 18C.0309) [Added March 1998; Revised February 2000].</p>	<p>Verify that written notice, including submission of applicable plans, specifications and engineering reports, is submitted to the Department by any water source intending to construct, alter, or expand a noncommunity water system.</p> <p>Verify that no construction, alteration, or expansion of a water system is placed into service and no service connections made until the system has received Final Approval from the Department.</p> <p>(NOTE: Temporary approval may be granted by the Department for system alterations required to remedy an imminent hazard as determined by the Department.)</p>

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<p>NONTRANSIENT NONCOMMUNITY WATER SYSTEMS</p> <p>WQ.76. Standards</p> <p>WQ.76.1.NC. Surface water supplies may be used for nontransient, noncommunity water systems if specific requirements are met (15A NCAC 18C.0201 and 18C.0202).</p> <p>WQ.76.2.NC. [Deleted March 2010].</p> <p>WQ.76.3.NC. Facilities must meet specific requirements when using springs as a water source (15A NCAC 18A.1720 (b) and</p>	<p>Verify that the water supply is derived from uninhabited wooded areas.</p> <p>Verify that the entire watershed is either owned or controlled by the water system owner or is under the control of the Federal or state government.</p> <p>(NOTE: No such new water supply may be created except where the water system owner owns in its entirety the watershed from which the water will be obtained.)</p> <p>Verify that the water, after disinfection, is of potable quality as determined by bacteriological and chemical tests performed by a certified laboratory.</p> <p>Verify that the water source has a WS-I classification as established by the Environmental Management Commission and meets quality standards for that classification.</p> <p>Verify that any surface water that will receive treatment for removal of dissolved matter or suspended matter in order to be used for a public water system is obtained from a source meeting WS-I, WS-II, WS-III, WS-IV, or WS-V stream classification standards established by the Environmental Management Commission.</p> <p>Verify that the water source is protected from sources of pollution as determined by a sanitary survey of the watershed made by an authorized representative of the Department.</p> <p>Verify that the source supply is sufficient in capacity to satisfy anticipated needs of the users for the period of design.</p> <p>(NOTE: 15A NCAC 18C.1303 revised.)</p> <p>(NOTE: If the spring is serving an establishment on or before 1 July 1993, it is approved unless a violation is identified, in which case the spring complies with all requirements required of springs developed after 1 July 1993.)</p> <p>Verify that approved springs are not connected until compliance has been</p>

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<p>18A.1723) [Added March 1998].</p> <p>WQ.76.4.NC. Water supplies must be disinfected upon completion of construction, maintenance, repairs, pump installations, or a report of positive coliform sample (15A NCAC 18A.1720(b) and 18A.1724) [Citation Revised March 2007].</p> <p>WQ.76.5.NC. Certain supplies are prohibited for the supply of drinking water for noncommunity, nontransient water supplies (15A NCAC 18A.1720 (b) and 18A.1728) [Citation Revised March 2007].</p>	<p>completed and the Department receives certification from an engineer licensed to practice in North Carolina that the spring has been constructed in accordance with the approved plans and specifications.</p> <p>Verify that a water supply is disinfected as follows:</p> <ul style="list-style-type: none"> - chlorine in sufficient quantities to produce a chlorine residual of at least 100 mg/ L is placed in the water supply - the chlorine solution is placed in the supply so as to come into contact with any water-contact parts and materials above the normal water level - the chlorine solution stands in the water supply for at least 24 h - the supply flows to waste until no disinfectant can be measured with a test kit <p>Verify that a spring enclosure is disinfected as follows:</p> <ul style="list-style-type: none"> - interior walls of the enclosure are washed or swabbed with a chlorine solution of at least 100 mg/L or greater of chlorine residual approved by the Department - the disinfectant is poured into the spring, the service pipe is plugged, and water is retained in the spring storage for at least 24 h, or disinfectant is fed into the spring continuously for at least 24 h - the spring flows to waste until no disinfectant can be measured with a test kit. <p>Verify that the following are not used as drinking water supplies:</p> <ul style="list-style-type: none"> - water supplies with the presence of fecal coliform bacteria - cisterns.

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<p>NONTRANSIENT NONCOMMUNITY WATER SYSTEMS</p> <p>WQ.77. Monitoring/ Sampling</p> <p>WQ.77.1.NC. Nontransient, noncommunity water systems serving a population of fewer than 10,000 individuals and which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process must analyze for TTHMs (15A NCAC 18C.1533).</p>	<p>(NOTE: The minimum number of samples required to be taken is based on the number of treatment plants used by the water system, except that multiple wells drawing raw water from a single aquifer may, with Department approval, be considered one treatment plant for determining the minimum number of samples.)</p> <p>Verify that all samples taken within an established frequency are collected within a 24- h period.</p> <p>Verify that, for all nontransient, noncommunity water systems using surface water sources in whole or in part or using only groundwater sources, analyses for TTHMs are made as follows:</p> <ul style="list-style-type: none"> - performed at quarterly intervals on at least one water sample taken at a location within the distribution system reflecting maximum residence time of the water in the system - results of all analyses per quarter are reported to the Department within 30 days of receipt - if more than one analysis is performed, results of all analyses are arithmetically averaged - all samples collected are used in computation of the average, unless analytical results are invalidated for technical reasons. <p>(NOTE: The Department may reduce the monitoring.)</p> <p>Verify that compliance with MCLs (see 40 CFR 141.12) is determined based on a running annual average of quarterly samples collected by the system.</p> <p>Verify that, if the average of samples covering any 12-mo period exceeds the MCL, the supplier reports to the Department and notifies the public.</p> <p>Verify that quarterly monitoring after public notification continues until a monitoring schedule, as a condition to a variance, exemption, or enforcement action, becomes effective.</p> <p>(NOTE: Trihalomethane MCLs for a community water system or a nontransient, noncommunity water system serving fewer than 10,000 individuals takes effect 1 yr from the date the system begins quarterly sampling.)</p>
<p>WQ.77.2.NC. Nontransient,</p>	<p>Verify that, to comply with monitoring requirements for inorganic and organic</p>

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<p>noncommunity water supplies serving fewer than 150 service connections must meet specific requirements regarding monitoring for inorganic and organic chemicals other than TTHMs (15A NCAC 18C.1516(b) and(c)).</p> <p>WQ.77.3.NC. The water quality of a new non-transient, noncommunity water supply must be tested and found to be safe (15A NCAC 18A.1720 (b), 18A.1725 (a), 18A.1726, and 18A.1727) [Revised March 2007].</p>	<p>chemicals, the system takes a single water sample to be analyzed for inorganic and organic chemicals.</p> <p>(NOTE: Travel trailer parks, campgrounds, and marina slips that are community water systems as defined by GS 130A-313(10), but do not serve 25 or more of the same persons more than 6 mo/yr, are exempt from these requirements.)</p> <p>Verify that 2 consecutive bacteriological water samples taken at least 48 hours apart are collected and submitted to the Division of Laboratory Services of the Department of Environment, Health, and Natural Resources or another certified laboratory for analysis under the following conditions:</p> <ul style="list-style-type: none"> - prior to the initial use of a water supply - after construction, maintenance, repairs, pump installation - a report of a positive coliform sample. <p>(NOTE: A water supply not deemed safe may be replaced by an emergency supply system for up to 3 mo provided the Public Water Supply Section approves the emergency supply system.)</p> <p>Verify that, if a water supply with a presence of total coliforms is used, the supply is continuously disinfected and a chlorine residual is maintained of at least 0.2 mg/L with equipment designed for this purpose.</p> <p>Verify that a certified operator operates any water supply using continuous disinfection.</p> <p>Verify that the operator provides a statement to the Department that a supply using continuous disinfection has a minimum chlorine residual of 0.2 mg/L and a chlorine contact time of at least 20 min.</p> <p>(NOTE: A disinfection device must not be used if fecal coliform bacteria are found.)</p>

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<p>NONTRANSIENT NONCOMMUNITY WATER SYSTEMS</p> <p>WQ.79. Notification and Reporting Requirements</p> <p>WQ.79.1.NC. Nontransient, noncommunity water systems (NTNCs) that intend to modify or expand operations must notify the Department (15A NCAC 18C.0301(a) and 18C.0309) [Added March 1998; Revised February 2000].</p> <p>WQ.79.2.NC. [Deleted March 2010].</p> <p>WQ.79.3.NC. Suppliers for a NTNC who is required to monitor for organic chemicals must meet specific reporting requirements (15A NCAC 18C.1524).</p>	<p>(NOTE: NTNCs are not subject to this requirement unless constructed, altered, or expanded on or after 1 July 1994.)</p> <p>Verify that written notice, including submission of applicable plans, specifications and engineering reports, is submitted to the Department by any water source intending to construct, alter, or expand a noncommunity water system.</p> <p>Verify that no construction, alteration, or expansion of a water system is placed into service and no service connections made until the system has received Final Approval from the Department.</p> <p>(NOTE: Temporary approval may be granted by the Department for system alterations required to remedy an imminent hazard as determined by the Department.)</p> <p>(NOTE: 15A NCAC 18C.1303 revised.)</p> <p>(NOTE: These requirements only apply to contaminants listed in 40 CFR 141.40.)</p> <p>Verify that the water supplier sends to the Department a copy of monitoring results within 30 days of receipt and a copy of any required public notice.</p> <p>Verify that the water supplier notifies persons served by the system of the availability of sampling results by including a notice in the first set of water bills issued after receipt of the results, or by a written or newspaper notice, within 3 mo.</p> <p>Verify that the notice identifies a person and telephone number to contact for information on monitoring results.</p> <p>(NOTE: For surface water systems, public notice is required only after the first quarter's monitoring and includes a statement that additional monitoring will be conducted for 3 more quarters with results available upon request.)</p>

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WQ.90. DRINKING WATER WELL WQ.90.1.NC. Facilities must obtain a well construction permit prior to construction of a well (15A NCAC 2C.0105) [Revised March 1998; Revised March 2003; Revised March 2010].	<p>Verify that no person locates or constructs any of the following wells until a permit has been issued by the Department:</p> <ul style="list-style-type: none"> - any water-well or well system with a designed capacity of 100,000 gallons per day (gpd) or greater - any well added to an existing system where the total designed capacity of such existing well system and added well will equal or exceed 100,000 gpd - any well with a design deviation from the standards specified under the rules of this Subchapter, including wells for which a variance is required.. <p>(NOTE: See WQ.100.1.NC.for additional non-water supply wells that require a permit.)</p>
WQ.90.2.NC. [Deleted March 2010].	<p>(NOTE: 15A NCAC 2C.0103 repealed.)</p>
WQ.90.3.NC. Water supply wells must meet specific location standards (15A NCAC 2C.0107 (a)) [Revised March 2007; Revised March 2010].	<p>Verify that water supply wells are not located in any area where surface water or runoff will accumulate around the well due to depressions, drainage ways, and other landscapes that will concentrate water around the well.</p> <p>Verify that the minimum horizontal separation between wells and potential sources of groundwater contamination meet the distances outlined in Appendix 13-1.</p>
WQ.90.4.NC. The source of water for water supply wells must meet specific standards (15A NCAC 2C.0107(b), 2C.0116 and 2C.0117) [Revised March 2010].	<p>Verify that the source of water for any water supply well is not from a water bearing zone or aquifer that is contaminated.</p> <p>Verify that in the designated areas described in 15A NCAC 02C.0117 (see Appendix 13-3), the source is greater than 35 feet below land surface;</p> <p>Verify that in the designated areas described in 15A NCAC 02C.0116 (see Appendix 13-3), the source may be less than 20 feet below land surface, but in no case less than 10 feet below land surface;</p> <p>Verify that, for wells constructed with separation distances less than those specified in Appendix 13-1 based on lot size or other fixed conditions, the source is greater than 35 feet below land surface except in areas described in Rule .0116.</p>

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<p>WQ.90.5.NC. Any site for a water supply well to be used as a community or nontransient, noncommunity water system must be approved by the Division of Environmental Health (15A NCAC 18C.0203) [Revised March 1998].</p>	<p>Verify that well constructed in all other areas the source is at least 20 feet below land surface.</p>
<p>WQ.90.6.NC. [Deleted February 1999].</p>	<p>Verify that the site has the approval of the Division of Environmental Health in addition to any approval or permit required by any other state agency.</p> <p>(NOTE: This checklist item repeated requirements in WQ.90.3.NC.)</p>
<p>WQ.90.7.NC. Drilling fluids and additives used for water supply wells must meet specific standards (15A NCAC 2C.0107(c)) [Revised March 2002].</p>	<p>Verify that drilling fluids and additives do not contain organic or toxic substances, or include water obtained from surface water bodies or water from a non-potable supply, and are comprised only of either:</p> <ul style="list-style-type: none"> - formational material encountered during drilling - materials manufactured specifically for borehole conditioning or water well construction.
<p>WQ.90.8.NC. The casing of water supply wells must meet construction standards (15A NCAC 2C.0107(d) and 18A.1721).</p>	<p>Verify that, if steel casing is used, the following criteria are met:</p> <ul style="list-style-type: none"> - the casing is new, seamless, or electric-resistance welded galvanized or black steel pipe with galvanizing done in accordance with requirements of American Society for Testing of Materials (ASTM) A-120 - the casing, threads, and couplings meet or exceed the specifications of ASTM A-53, A-120, or A589 - minimum wall thickness for a given diameter equals or exceeds that specified in Appendix 13-4. <p>Verify that stainless steel casing, threads, and couplings conform to general requirements in ASTM A-530 and also conform to specific requirements in the ASTM standard that best describes the chemical makeup of the stainless steel casing intended for use in construction of the well.</p> <p>Verify that the stainless steel casing has a minimum wall thickness equivalent to standard schedule number 10S.</p>

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<p>WQ.90.9.NC. Water supply well casings must meet depth requirements (15A NCAC 2C.0116 and .0117) [Added March 1998; Revised March 2010].</p>	<p>Verify that the steel casing is equipped with a drive shoe if the casing is driven in a consolidated rock formation and for any other wells if the casing is driven in a consolidated rock formation.</p> <p>Verify that the drive shoe is made of forged, high carbon, tempered seamless steel and has a beveled, hardened cutting edge.</p> <p>(NOTE: A drive shoe is not required for wells in which the grout surrounds and extends the entire length of the casing.)</p> <p>Verify that, if thermoplastic casing is used, then the following criteria are met:</p> <ul style="list-style-type: none"> - the casing is new - the casing and joints meet or exceed all specifications of ASTM F-480-81, except the outside diameters are not restricted to those listed in F-480 - the maximum depth of installation for a given SDR or Schedule number does not exceed that listed in Appendix 13-5. <p>(NOTE: For wells in which the casing extends into consolidated rock, it is recommended that the thermoplastic casing be equipped with a section of steel casing at least 3 ft in length, or other device approved by the Director, sufficient to protect the physical integrity of the casing during seating and grouting and subsequent drilling operations.)</p> <p>Verify that, in constructing any well, all water-bearing zones known to contain polluted, saline, or other nonpotable water are adequately cased and cemented off so that pollution of the overlying and underlying groundwater zones will not occur.</p> <p>Verify that the following well termination requirements are met:</p> <ul style="list-style-type: none"> - for wells constructed after 1 July 1993, casing is terminated at least 12 in. above land surface - wells constructed prior to 1 July 1993, casing is terminated at least 6 in. above the land surface. <p>Verify that every well is cased so that the bottom of the casing extends to a minimum depth as follows:</p> <ul style="list-style-type: none"> - wells located within the area described in Appendix 13-3 are cased from land surface to a depth of at least 35 ft - wells located within the area described in Appendix 13-2 are cased from land surface to a depth less than twenty feet - wells located in any other area are cased from land surface to a depth of at least 20 ft.

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WQ.90.10.NC. Water supply well casings constructed to obtain water from consolidated rock formations must meet specific construction requirements (15A NCAC 2C.0107(d)) [Added March 1998].	<p>Verify that the casing in wells constructed to obtain water from a consolidated rock formation are both:</p> <ul style="list-style-type: none"> - adequate to prevent any formational material from entering the well in excess of the following levels: <ul style="list-style-type: none"> -5 ml/L of settleable solids - 10 NTUs of turbidity as suspended solids - firmly seated at least 1 ft into the rock. <p>Verify that the casing in wells constructed to obtain water from an unconsolidated rock formation (such as gravel, sand, or shells) extends at least 1 ft into the top of the water-bearing formation.</p> <p>Verify that, upon completion of the well, the well casing is sufficiently free of obstacles as necessary to allow for installation and proper operation of pumps and associated equipment.</p>
WQ.90.11.NC. [Deleted March 2010].	<p>(NOTE: 15A NCAC 2C.0107(e) revised.)</p>
WQ.90.12.NC. Well screens on water supply wells must meet specific standards (15A NCAC 2C.0107(g)) [Revised March 1998; Revised March 2010].	<p>Verify that the well, if constructed to obtain water from an unconsolidated rock formation, is equipped with a screen that will adequately prevent the entrance of formation material into the well after it has been developed and completed.</p> <p>Verify that the well screen is designed to permit optimum development of the aquifer with minimum head loss consistent with the intended use of the well.</p> <p>Verify that the openings are designed to prevent clogging and are free of rough edges, irregularities, or other defects that may accelerate or contribute to corrosion or clogging.</p> <p>Verify that multi-screen wells do not connect aquifers or zones with differences in water quality.</p>
WQ.90.13.NC. Gravel- and sand-packed wells must meet specific construction standards (15A NCAC 2C.0107(h)) [Revised March 2010].	<p>Verify that, in constructing a gravel- or sand-packed well, the following criteria are met:</p> <ul style="list-style-type: none"> - packing material is composed of quartz, granite, or similar rock material and is clean, of uniform size, water-washed, and free from clay, silt, or other deleterious material - the size of the packing material is determined from a grain size analysis of formation material and is of a size sufficient to prohibit the entrance of formation material into the well in excess of the following levels:

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<p>WQ.90.14.NC. Well drillers must meet specific well development and completion standards (15A NCAC 2C.0107 (i) and (j)) [Revised March 1998; Revised March 2010].</p>	<ul style="list-style-type: none"> - 5 mL/L of settleable solids - 10 NTUs of turbidity as suspended solids - packing material is placed in the annular space around the screens and casing by a fluid circulation method to insure accurate placement and avoid bridging - packing material is disinfected - packing material does connect aquifers or zones with differences in water quality that would result in contamination of any aquifer or zone.. <p>Verify that the facilities ensures water supply wells are properly developed by the well contractor, including removal of formation materials, mud, drilling fluids, and additives such that the water contains no more than:</p> <ul style="list-style-type: none"> - 5 mL/L of settleable solids - 10 NTUs of turbidity as suspended solids. <p>Verify that every water supply well are equipped with a usable access port or air line (except those with a multi-pipe deep well jet pump or adapter mounted on the well casing or well head, and wells with casing two inches or less in diameter where a suction pipe is connected to a suction lift pump) meeting the following criteria:</p> <ul style="list-style-type: none"> - the access port has at least a 1/2 in. inside diameter opening so that the position of the water level can be determined at any time - these ports are installed and maintained so as to prevent entrance of water or foreign material. <p>Verify that an identification plate, displaying the name and registration number of the pump installation contractor is installed on the well within 72 h after completion of pump installation.</p> <p>Verify that this identification plate meets all of the following criteria:</p> <ul style="list-style-type: none"> - constructed of a durable waterproof, rustproof metal, or equivalent material approved by the Director - is not to be removed from the well casing or enclosure floor by any person - is stamped with a permanent marking to show the following information: <ul style="list-style-type: none"> - date the pump was installed - depth of the pump intake - horsepower rating of the pump. <p>Verify that flow control for artesian flowing wells consist of valved pipe connections, watertight pump connections, receiving tank, flowing well pitless adapter, packer or other methods approved by the Department to prevent the loss of artesian hydraulic head and stop the flow of water.</p> <p>Verify that the owners are responsible for the operation and maintenance of the</p>

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<p>WQ.90.15.NC. Pumps and pumping equipment for all well types must meet specific requirements (15A NCAC 2C.0109) [Revised March 2003; Revised March 2010].</p>	<p>valve.</p> <p>Verify that pitless adapters or pitless units are allowed as a method of well head completion only under the following conditions:</p> <ul style="list-style-type: none"> - design, installation and performance standards are those specified in PAS-97(04), which is hereby incorporated by reference, including subsequent amendments and editions, and can be obtained from the Water System Council National Programs Office, 1101 30th Street, N.W., Suite 500, Washington, DC 20007 at no cost - the pitless device is compatible with the well casing - the top of the pitless unit extends at least 12 inches above land surface - the excavation surrounding the casing and pitless device is filled with grout from the top of the casing grout to the land surface - the pitless device has an access port. <p>Verify that all openings for piping, wiring, and vents enter into the well at least 12 in. above land surface, except where pitless adapters or pitless units are used, and are adequately sealed to preclude the entrance of contaminants into the well.</p> <p>(NOTE: Repeated in WQ.100.7.NC.)</p> <p>Verify that the pumping capacity of the pump is consistent with its intended use and yield characteristics of the well.</p> <p>Verify that the pump and related equipment are conveniently located to permit easy access and removal for repair and maintenance.</p> <p>Verify that the base plate of a pump placed directly over the well is designed to form a watertight seal with the well casing or pump foundation.</p> <p>Verify that, in installations when the pump is not located directly over the well, the annular space between the casing and pump intake or discharge piping is closed with a watertight seal.</p> <p>Verify that the well head is equipped with a screened vent to allow for the pressure changes within the well except if a suction lift pump or single-pipe jet pump is used or artesian, flowing well conditions are encountered.</p> <p>Verify that, when installing the pump in any water supply well, a threadless sampling tap is installed at the wellhead for obtaining water samples except in the following situations:</p> <ul style="list-style-type: none"> - in the case of suction pump or offset jet pump installations the threadless sampling tap is installed on the return (pressure) side of the pump piping - in the case of pitless adapter installations, the threadless sampling tap is located immediately upstream of the water storage tank. - if the wellhead is also equipped with a threaded hose bibb in addition to the

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<p>WQ.90.16.NC. Facilities must meet specific requirements to protect the well head (15A NCAC 18A.1722).</p>	<p>threadless sampling tap, the hose bibb is fitted with a backflow preventer or vacuum breaker.</p> <p>Verify that the threadless sampling tap is turned downward, located a minimum of 12 inches above land surface, floor, or well pad, and positioned so that a water sample can be obtained without interference from any part of the wellhead.</p> <p>Verify that a priming tee is installed at the well head in conjunction with offset jet pump installations.</p> <p>Verify that joints of any suction line installed underground between the well and pump are tight under system pressure.</p> <p>Verify that drop piping and electrical wiring used in connection with the pump meet all applicable underwriters specifications.</p> <p>Verify that only potable water is used for priming the pump.</p> <p>Verify that the base plate of a pump placed directly over the well is designed to form a watertight seal with the well casing or pump foundation.</p> <p>Verify that, in an installation where the pump is not located directly over the well, the annular space between the casing and pump intake or discharge piping is closed with a watertight seal designed specifically for this purpose.</p> <p>Verify that the well is vented at the well head to allow for pressure changes within the well, except when a suction lift-type pump is used.</p> <p>Verify that any vent pipe or tube is screened or otherwise designed to prevent the entrance of insects or other foreign materials.</p> <p>Verify that, for a well constructed after 1 July 1993, a hose bib is installed at the well head for obtaining samples and, in the case of offset jet pump installations, the hose bib is installed directed downward on the pressure side of the jet pump piping.</p> <p>Verify that a vacuum breaker is installed on the hose bib.</p> <p>Verify that, for a well constructed after 1 July 1993, a continuous bond concrete slab, or well house concrete floor, extending at least 3 ft horizontally around the outside of the well casing is provided.</p> <p>Verify that the minimum thickness for the concrete slab or floor is 4 in. and the slab or floor slopes to drain away from the well casing.</p>

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<p>WQ.90.17.NC. All water supply wells must be disinfected upon completion of construction, maintenance, repairs, pump installation, and testing (15A NCAC 2C.0111) [Revised March 1998; Revised March 2010].</p>	<p>Verify that these wells are disinfected as follows:</p> <ul style="list-style-type: none"> - hypochlorite is placed in the well in sufficient quantities to produce a chlorine residual of at least 100 parts per million (ppm) in the well. - stabilized chlorine tablets or hypochlorite products containing fungicides, algaecides, or other disinfectants are not used - chlorine test strips or other quantitative test methods are used to confirm the concentration of the chlorine residual. - hypochlorite is placed in the well by one of the following or equivalent methods: <ul style="list-style-type: none"> - granular hypochlorite is dropped in the top of the well and allowed to settle to the bottom - hypochlorite solutions is placed in the bottom of the well by using a bailer or by pouring the solution through the drill rod, hose, or pipe placed in the bottom of the well with the solution flushed out of the drill rod, hose, or pipe by using water or air - agitate or circulate the water in the well to ensure thorough dispersion of the chlorine - the well casing, pump column, and any other equipment above the water level in the well is thoroughly rinsed with the chlorine solution - the chlorine solution stands in the well for at least 24 h - the well is pumped until there is no detectable total chlorine in the water pumped from the well before being placed in use. <p>(NOTE: Other materials and methods of disinfection at least as effective as chlorination may be used upon prior approval by the Department.)</p> <p>(Note: About three ounces of hypochlorite containing 65 percent to 75 percent available chlorine is needed per 100 gallons of water for at least a 100 ppm chlorine residual. As an example, a well having a diameter of six inches, has a volume of about 1.5 gallons per foot. If the well has 200 feet of water, the minimum amount of hypochlorite required would be 9 ounces. (1.5 gallons/foot x 200 feet = 300 gallons at 3 ounces per 100 gallons; 3 ounces x 3 = 9 ounces.)</p>
<p>WQ.90.18.NC. All wells must meet specific maintenance requirements (15A NCAC 2C.0112) [Revised March 2003; Revised March 2010].</p>	<p>(NOTE: Repeated in WQ.100.5.NC.)</p> <p>Verify that every well is maintained in a condition that will both conserve and protect groundwater resources and not be a source or channel of contamination or pollution to the water supply or any aquifer.</p> <p>Verify that all materials used in maintenance, replacement, or repair of any well meets the requirements for new installation.</p> <p>Verify that broken, punctured, or otherwise defective or unserviceable casing, screens, fixtures, seals, or any part of the well head are repaired or replaced, or the well is permanently abandoned (see WQ.90.19.NC.).</p> <p>(NOTE: National Science Foundation (NSF) approved PVC pipe rated at 160</p>

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<p>WQ.90.19.NC. Wells must be abandoned according to specific procedures (15A NCAC 2C.0113) [Revised March 2010].</p>	<p>PSI may be used for liner casing.)</p> <p>Verify that the annular space around the liner casing is at least five-eighths inches and is completely filled with neat-cement grout or sand cement grout.</p> <p>Verify that the well liner is completely grouted within 10 working days after collection of water samples or completion of other testing to confirm proper placement of the liner or within 10 working days after the liner has been installed if no sampling or testing is performed.</p> <p>Verify that wells are repaired or altered such that the outer casing is completed less than 12 inches above land surface.</p> <p>Verify that any grout excavated or removed as a result of the well repair is replaced.</p> <p>Verify that well rehabilitation by noncontinuous chemical treatment is conducted using methods and materials approved by the Department.</p> <p>(NOTE: Repeated in WQ.100.8.NC.)</p> <p>Verify that, when temporarily abandoning a well or temporarily removing the well from service, the following steps are taken:</p> <ul style="list-style-type: none"> - the well is sealed with a water-tight cap or seal compatible with the casing and installed so that it cannot be removed without the use of hand tools or power tools - the well is maintained whereby it is not a source or channel of contamination during temporary abandonment. <p>Verify that permanent abandonment of water supply wells other than bored or hand dug wells is performed in accordance with the following procedures:</p> <ul style="list-style-type: none"> - all casing and screen materials are removed prior to initiation of abandonment procedures if such removal will not cause or contribute to contamination of the groundwaters (Any casing not grouted in compliance is removed or regouted - the entire depth of the well is sounded before it is sealed to ensure freedom from obstructions that may interfere with sealing operations - in the case of gravel-packed wells in which the casing and screens have not been removed, neat-cement, or bentonite slurry grout is injected into the well completely filling it from the bottom of the casing to the top - wells constructed in unconsolidated formations are completely filled with grout by introducing it through a pipe extending to the bottom of the well which can be raised as the well is filled - wells constructed in consolidated rock formations or that penetrate zones of consolidated rock may be filled with grout, sand, gravel or drill cuttings opposite the zones of consolidated rock:

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<p>WQ.90.20.NC. Facilities must meet specific well reporting requirements (15A NCAC 2C.0114(b) and 2E.0202(c)(1)) [Revised March 2010].</p>	<ul style="list-style-type: none"> - the top of any sand, gravel or cutting fill terminate at least 10 feet below the top of the consolidated rock or five feet below the bottom of casing - grout is placed beginning 10 feet below the top of the consolidated rock or five feet below the bottom of casing in a manner to ensure complete filling of the casing, and extend up to land surface - for any well in which the depth of casing or the depth of the bedrock is not known or cannot be confirmed, the entire length of the well is filled with grout up to land surface. <p>Verify that any facility completing or abandoning any well submits, or ensures that the driller submits, to the Division a record of construction or abandonment.</p> <p>Verify that, for public water supply wells, a copy of each completion or abandonment record is also submitted to the Health Department responsible for the county in which the well is located.</p> <p>Verify that the record is on forms provided by the Division and include the following information:</p> <ul style="list-style-type: none"> - certification that construction or abandonment was completed as required - owner's name and address - latitude and longitude of the well with a position accuracy of 100 feet or less - diameter, depth, and yield - any other information the Division may reasonably require. <p>Verify that the certified record of completion or abandonment is submitted within 30 days after completion or abandonment.</p> <p>(NOTE: The furnishing of records to any person or agency other than the Division does not constitute compliance and does not relieve the driller of his obligation to the Department.)</p> <p>Verify that samples of formation cuttings from all wells are furnished to the Director, except when the Director specifies such samples are not required.</p> <p>Verify that, for wells withdrawing more than 1,000,000 gal a day, a description of the proposed device for metering withdrawals is included in the completion report.</p> <p>Verify that the abandonment report includes the location and method of sealing and plugging.</p>
<p>WQ.90.21.NC. Private drinking water well construction and repair must be permitted and certified by</p>	<p>Verify that a well construction permit is obtained from the Department.</p> <p>Verify that a well repair permit is obtained prior to the repair of a private drinking</p>

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<p>the local health department (15A NCAC 2C.0304, 2C.305, and 2C.306) [Added March 2009; Revised March 2010].</p>	<p>water well.</p> <p>(NOTE: A well repair permit is not required for maintenance or pump repair or replacement. Disinfection in accordance with 15A NCAC 02C.0111 is a maintenance activity that does not require a repair permit.)</p> <p>Verify that the Department provided a written certification on the well permit that a grout inspection was completed and that the grouting is in compliance with the rules of 15A NCAC 02C.0100.</p> <p>Verify that the well contractor maintains a copy of the well construction permit or repair permit on the job site at all times during the construction, repair or abandonment of the well.</p> <p>Verify that the well contractor meets all the conditions of the permit.</p> <p>Verify that, upon completion of construction or repair of a private drinking water well for which a permit is required, the Department inspects the well and issue a Certificate of Completion.</p> <p>Verify that a private drinking water well is not put into service without first having obtained a Certificate of Completion.</p> <p>(NOTE: When a local health department is unable to conduct a grout inspection within one hour of the scheduled time, the well contractor may grout a well without a grout inspection by the Department. The well contractor shall provide a written certification to the local health department that the well has been grouted in compliance with the rules of 15A NCAC 02C.0100. A completed Well Construction Record form GW-1 indicating the well was grouted in compliance with the rules of this Section shall serve as the well contractor's grout certification. For purposes of issuing a certificate of completion, the well contractor's grout certification shall be accepted by the Department as evidence the grout complies with the rules of this Section.)</p>
<p>WQ.90.22.NC. Private drinking water well construction, repair, and abandonment must be reported to the local health department and the Division of Water Quality (15A NCAC 2C.0307) [Added March 2009].</p>	<p>Verify that any person completing, abandoning or repairing any well submits a record of the construction, abandonment or repair to the local health department and the Division of Water Quality within 30 days of completion of construction, abandonment or repair.</p>

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<p>WQ.100.</p> <p>MISCELLANEOUS WELLS</p> <p>WQ.100.1.NC. Wells, other than water supply wells, must meet permit requirements and employ registered drillers and pump installers (15A NCAC 2C.0105) [Revised March 2003; Revised March 2004; Revised March 2010].</p> <p>WQ.100.2.NC. Wells, other than water supply wells, must meet specific requirements (15A NCAC 2C.0108(a), (e), (f), (g), (j), and (m)) [Revised March 2003].</p>	<p>Verify that the following wells are not located or constructed before a permit is issued by the Director:</p> <ul style="list-style-type: none"> - any monitoring well or monitoring well system, constructed to assess hydrogeologic conditions on property not owned by the well owner - any recovery well - any well with a design deviation from the standards specified, including wells for which a variance is required. <p>(NOTE: In the event of an emergency, monitoring wells or recovery wells may be constructed after verbal approval is provided by the Director or his delegate. After-the-fact applications must be submitted by the driller or owner within 10 days after construction begins. The application shall include construction details of the monitoring.)</p> <p>Verify that no well is located, constructed, operated, or repaired in any manner that may adversely impact the quality of groundwater.</p> <p>Verify that the well does not hydraulically connect to separate aquifers or those portions of a single aquifer where contamination occurs in separate and definable layers within the aquifer.</p> <p>Verify that the well construction materials are compatible with the depth of the well and any contaminants to be monitored or recovered.</p> <p>Verify that the well is constructed in such a manner that water or contaminants from the land surface cannot migrate along the borehole annulus into any packing material or well screen area.</p> <p>Verify that are wells are grouted within 7 days after the casing is set.</p> <p>Verify that, if the well penetrates any water-bearing zone that contains contaminated or saline water, the well is grouted within 1 day after the casing is set.</p> <p>Verify that any well that flows under natural artesian conditions is valved so that the flow can be regulated.</p> <p>(NOTE: See WQ.100.3.NC. and WQ.100.4.NC. for additional requirements.)</p>

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<p>WQ.100.3.NC. Monitoring and recovery wells must meet specific requirements (15A NCAC 2C.0108(c) and (d)) [Revised March 2010].</p>	<p>Verify that monitoring well and recovery wells are located, designed, constructed, operated, and abandoned with materials and by methods that are compatible with the chemical and physical properties of the contaminants involved, specific site conditions, and specific subsurface conditions.</p> <p>Verify that monitoring well and recovery well boreholes do not penetrate to a depth greater than the depth to be monitored or the depth from which contaminants are to be recovered.</p> <p>Verify that any portion of the borehole that extends to a depth greater than the depth to be monitored or the depth from which contaminants are to be recovered is grouted completely to prevent vertical migration of contaminants.</p> <p>(NOTE: See WQ.100.2.NC. and WQ.100.4.NC. for additional requirements.)</p>
<p>WQ.100.4.NC. Non-water supply wells must meet design and management requirements (15A NCAC 2C.0108 (h), (i), (k), (l), (n), (o), (p), and (s)) [Citation Revised March 2003; Revised March 2010].</p>	<p>Verify that wells have packing material placed around the screen extending at least one foot above the top of the screen.</p> <p>Verify that, unless the depth of the screen necessitates a thinner seal, a 1 foot thick seal, comprised of chip or pellet bentonite or other material approved by the Department as equivalent, is emplaced directly above and in contact with the packing material.</p> <p>Verify that grout is placed in the annular space between the outermost casing and the borehole wall from the land surface to the top of the bentonite seal above any well screen or to the bottom of the casing for open end wells.</p> <p>Verify that all non-water supply wells, including temporary wells, are secured with a locking well cap to ensure against unauthorized access and use.</p> <p>Verify that all non-water supply wells are equipped with a steel outer well casing or flush-mount cover, set in concrete, and other measures sufficient to protect the well from damage by normal site activities.</p> <p>Verify that temporary wells and all other non-water supply wells are constructed in such a manner as to preclude the vertical migration of contaminants within and along the borehole channel.</p> <p>Verify that in non-water supply wells, the well casing is terminated no less than 12 inches above land surface unless all of the following conditions are met:</p> <ul style="list-style-type: none"> - site-specific conditions directly related to business activities, such as vehicle traffic, would endanger the physical integrity of the well - the well head is completed in such a manner so as to preclude surficial contaminants from entering the well.

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<p>WQ.100.5.NC. All wells must meet specific maintenance requirements (15A NCAC 2C.0112) [Revised March 2010].</p>	<p>Verify that each well has permanently affixed an identification plate constructed of a durable material and containing the following information:</p> <ul style="list-style-type: none"> - drilling contractor name and registration number - date well completed - total depth of well - a warning that the well is not for water supply and that the groundwater may contain hazardous materials - depth(s) to the top(s) and bottom(s) of the screen(s) - the well identification number or name assigned by the well owner. <p>Verify that each well is developed so that the level of turbidity or settleable solids does not preclude accurate chemical analyses of any fluid samples collected.</p> <p>(NOTE: See WQ.100.2.NC. and WQ.100.3.NC. for additional requirements.)</p> <p>(NOTE: Repeated in WQ.90.18.NC.)</p> <p>Verify that every well is maintained in a condition that will both conserve and protect groundwater resources and not be a source or channel of contamination or pollution to the water supply or any aquifer.</p> <p>Verify that all materials used in maintenance, replacement, or repair of any well meets the requirements for new installation.</p> <p>Verify that broken, punctured, or otherwise defective or unserviceable casing, screens, fixtures, seals, or any part of the well head are repaired or replaced, or the well is permanently abandoned (see WQ.100.8.NC.).</p> <p>(NOTE: National Science Foundation (NSF) approved PVC pipe rated at 160 PSI may be used for liner casing.)</p> <p>Verify that the annular space around the liner casing is at least five-eighths inches and is completely filled with neat-cement grout or sand cement grout.</p> <p>Verify that the well liner is completely grouted within 10 working days after collection of water samples or completion of other testing to confirm proper placement of the liner or within 10 working days after the liner has been installed if no sampling or testing is performed.</p> <p>Verify that wells are repaired or altered such that the outer casing is completed less than 12 inches above land surface.</p> <p>Verify that any grout excavated or removed as a result of the well repair is replaced.</p> <p>Verify that well rehabilitation by noncontinuous chemical treatment is conducted</p>

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<p>WQ.100.6.NC. Wells constructed to monitor for the presence of vapors or liquids associated with underground storage tanks must meet specific requirements (15A NCAC 2C.0108(q) and (r)) [Revised March 1998; Revised March 2003; Revised March 2010].</p> <p>WQ.100.7.NC. Pumps and pumping equipment for all well types must meet specific requirements (15A NCAC 2C.0109) [Revised March 2003; Revised March 2010].</p>	<p>using methods and materials approved by the Department.</p> <p>Verify that wells constructed to monitor for the presence of vapors associated with USTs meet the following construction criteria which require that wells be:</p> <ul style="list-style-type: none"> - constructed so as to prevent the entrance of surficial contaminants or water into or alongside the well casing - provided with a lockable cap in order to reasonably ensure against unauthorized access and use. <p>Verify that wells constructed for the purpose of monitoring or testing for the presence of liquids associated with tanks regulated under 15A NCAC 02N (Criteria and Standards Applicable to Underground Storage Tanks) are constructed in accordance with 15A NCAC 02N.0504.</p> <p>(NOTE: Repeated in WQ.90.15.NC.)</p> <p>Verify that the pumping capacity of the pump is consistent with its intended use and yield characteristics of the well.</p> <p>Verify that the pump and related equipment are conveniently located to permit easy access and removal for repair and maintenance.</p> <p>Verify that the base plate of a pump placed directly over the well is designed to form a watertight seal with the well casing or pump foundation.</p> <p>Verify that, in installations when the pump is not located directly over the well, the annular space between the casing and pump intake or discharge piping is closed with a watertight seal.</p> <p>Verify that the well head is equipped with a screened vent to allow for the pressure changes within the well except if a suction lift pump or single-pipe jet pump is used or artesian, flowing well conditions are encountered.</p> <p>Verify that, when installing the pump in any water supply well, a threadless sampling tap is installed at the wellhead for obtaining water samples except in the following situations:</p> <ul style="list-style-type: none"> - in the case of suction pump or offset jet pump installations the threadless sampling tap is installed on the return (pressure) side of the pump piping - in the case of pitless adapter installations, the threadless sampling tap is located immediately upstream of the water storage tank. - if the wellhead is also equipped with a threaded hose bibb in addition to the threadless sampling tap, the hose bibb is fitted with a backflow preventer or vacuum breaker.

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<p>WQ.100.8.NC. Wells must be abandoned according to specific procedures (15A NCAC 2C.0113 (a), (c), (d), (e), (f), and (g)) [Added March 2003; Revised March 2010].</p>	<p>Verify that the threadless sampling tap is turned downward, located a minimum of 12 inches above land surface, floor, or well pad, and positioned so that a water sample can be obtained without interference from any part of the wellhead.</p> <p>Verify that a priming tee is installed at the well head in conjunction with offset jet pump installations.</p> <p>Verify that joints of any suction line installed underground between the well and pump are tight under system pressure.</p> <p>Verify that drop piping and electrical wiring used in connection with the pump meet all applicable underwriters specifications.</p> <p>Verify that only potable water is used for priming the pump.</p> <p>(NOTE: Repeated in WQ.90.19.NC.)</p> <p>Verify that, when temporarily abandoning a well or temporarily the well from service, the following steps are taken:</p> <ul style="list-style-type: none"> - the well is sealed with a water-tight cap or seal compatible with the casing and installed so that it cannot be removed without the use of hand tools or power tools - the well is maintained whereby it is not a source or channel of contamination during temporary abandonment. <p>Verify that the following requirements are met for bored wells or hand dug water supply wells, constructed into unconsolidated material:</p> <ul style="list-style-type: none"> - the well is disinfected - all plumbing or piping in the well and any other obstructions inside the well is removed from the well - the uppermost three feet of well casing is removed from the well - all soil or other subsurface material present down to the top of the remaining well casing is removed, including the material extending to a width of at least 12 inches outside of the well casing - the well is filled to the top of the remaining casing with grout, dry clay, or material excavated during construction of the well (If dry clay or material excavated during construction of the well is used, it shall be emplaced in lifts no more than five feet thick, each compacted in place prior to emplacement of the next lift.) - a six-inch thick concrete grout plug is placed on top of the remaining casing such that it covers the entire excavated area above the top of the casing, including the area extending to a width of at least 12 inches outside the well casing. - the remainder of the well above the concrete plug is filled with grout or soil. <p>Verify that the following requirements are met for all wells other than water</p>

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	<p>supply wells, including temporary wells, monitoring wells or test borings:</p> <ul style="list-style-type: none"> - less than 20 feet in depth and which do not penetrate the water table is abandoned by filling the entire well up to land surface with grout, dry clay, or material excavated during drilling of the well and then compacted in place - greater than 20 feet in depth or that penetrate the water table is abandoned by completely filling with a bentonite or cement--type grout. <p>Verify that the following requirements are met for bored wells or hand dug water supply wells, constructed into unconsolidated material:</p> <ul style="list-style-type: none"> - the well is disinfected - all plumbing or piping in the well and any other obstructions inside the well is removed from the well - the uppermost three feet of well casing is removed from the well -all soil or other subsurface material present down to the top of the remaining well casing is removed, including the material extending to a width of at least 12 inches outside of the well casing - the well is filled to the top of the remaining casing with grout, dry clay, or material excavated during construction of the well (If dry clay or material excavated during construction of the well is used, it shall be emplaced in lifts no more than five feet thick, each compacted in place prior to emplacement of the next lift.) - a six-inch thick concrete grout plug is placed on top of the remaining casing such that it covers the entire excavated area above the top of the casing, including the area extending to a width of at least 12 inches outside the well casing. - the remainder of the well above the concrete plug is filled with grout or soil. <p>Verify that the following requirements are met for all wells other than water supply wells, including temporary wells, monitoring wells or test borings:</p> <ul style="list-style-type: none"> - less than 20 feet in depth and which do not penetrate the water table is abandoned by filling the entire well up to land surface with grout, dry clay, or material excavated during drilling of the well and then compacted in place - greater than 20 feet in depth or that penetrate the water table is abandoned by completely filling with a bentonite or cement--type grout. <p>Verify that any well that acts as a source or channel of contamination is repaired or permanently abandoned within 30 days of receipt of notice from the Department.</p> <p>Verify that all wells are permanently abandoned when the casing has not been installed or when the casing has been removed prior to removing equipment from the site.</p> <p>Verify that the well owner is responsible for permanent abandonment of a well, except under the following circumstances:</p> <ul style="list-style-type: none"> - the well contractor is responsible for well abandonment if abandonment is

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<p>WQ.100.9.NC. Facilities must meet specific well reporting requirements (15A NCAC 2C.0114(b)) [Added March 2003].</p>	<p>required because the well contractor improperly locates, constructs, repairs or completes the well</p> <ul style="list-style-type: none"> - the person who installs, repairs or removes the well pump is responsible for well abandonment if that abandonment is required because of improper well pump installation, repair or removal - the well contractor (or individual) who conducts a test boring is responsible for its abandonment at the time the test boring is completed and has fulfilled its useful purpose. <p>Verify that any facility completing or abandoning any well submits, or ensures that the driller submits, to the Division a record of construction or abandonment.</p> <p>Verify that the certified record of completion or abandonment is submitted within 30 days after completion or abandonment.</p>

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<p>UNDERGROUND INJECTION CONTROL (UIC)</p> <p>WQ.109. All Wells</p> <p>WQ.109.1.NC. Facilities must have a permit to construct, operate, or use any well for injection (15A NCAC 2C.0211(a), (g), (j), (p), and (q)).</p>	<p>Verify that the facility has a permit prior to constructing, operating, or using any well for injection.</p> <p>Verify that injection does not begin until construction is complete, notice of completion of construction has been submitted to the Director, and the Director has inspected, or otherwise reviewed, the injection well and finds it in compliance with permit conditions.</p> <p>Verify that the facility at all times properly operates and maintains all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of the permit.</p> <p>(NOTE: Proper operation and maintenance includes effective performance and adequate laboratory and process controls, including appropriate quality assurance procedures.)</p> <p>Verify that the permit is not transferred to any person except after notice to and approval by the Director.</p> <p>Verify that the facility reports any monitoring or other information indicating any of the following:</p> <ul style="list-style-type: none"> - a contaminant endangering an underground source of drinking water - noncompliance with a permit condition - malfunction of the injection system that may cause fluid migration outside the injection zone or area. <p>Verify that this information is provided orally to the Director within 8 h of the occurrence and as a written submission within 5 days of the occurrence.</p> <p>Verify that the written submission contains the following:</p> <ul style="list-style-type: none"> - description of noncompliance and its cause - period of noncompliance, including exact dates and times - if the noncompliance has not been corrected, anticipated time it is expected to continue - any steps taken or planned to reduce, eliminate, and prevent reoccurrence.

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<p>WQ.109.2.NC. Injection wells that are not in compliance with permitting regulations or that threaten water quality must meet reporting and recordkeeping requirements (15A NCAC 2C.0206 and 0210) [Revised March 1998].</p>	<p>Verify that the operator of any well that does not have a permit for injection of wastes, or where continued operation threatens any water quality standard or classification, which has been used to inject wastes or contaminants meets the following reporting requirements:</p> <ul style="list-style-type: none"> - the Division is orally notified within 24 h (or the next business day), and in writing within 5 calendar days, of becoming aware of any instance of noncompliance - perform a complete site assessment and submit to the Division, as soon as practicable or in accordance with a schedule established by the Director, a report which includes but is not limited to a description of: <ul style="list-style-type: none"> - the source and cause of contamination - any imminent hazards to public health and safety and actions taken to mitigate them - all receptors and significant exposure pathways - the horizontal and vertical extent of soil and groundwater contamination and all significant factors affecting contaminant transport - any geological and hydrogeological features influencing the movement or chemical or physical character of the contaminants. - submit a corrective action plan and a proposed schedule for implementation to the Director, including, at a minimum, the following: <ul style="list-style-type: none"> - a description of the proposed corrective action and reasons for its selection - specific plans, including engineering details where applicable for restoring the groundwater quality and for restoring the integrity of the injection facility if the injection facility activity is to continue - a schedule for the implementation and operation of the proposed plan - a monitoring plan for evaluating the effectiveness of the proposed corrective action.
<p>WQ.109.3.NC. Facilities operating a permitted injection well must meet specific recordkeeping requirements (15A NCAC 2C.0211(q)) [Citation Revised March 1998].</p>	<p>Verify that the facility retains copies of all monitoring information records, including the following, for at least 3 yr from the date of the sample, measurement, report, or application:</p> <ul style="list-style-type: none"> - all calibration and maintenance records - all original strip chart recordings for continuous monitoring instrumentation - copies of all reports required by the permit. <p>Verify that the records include the following information:</p> <ul style="list-style-type: none"> - date, exact place, and time of sampling or measurements - individual(s) who performed the sampling or measurements - date(s) analyses were performed - individual(s) who performed the analyses - analytical techniques or methods used - results of any sampling, measurements, and analyses.

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<p>WQ.109.4.NC. Facilities abandoning any injection well must take specific steps (15A NCAC 2C.0214) [Revised March 1998].</p>	<p>Verify that the Director is notified of the abandonment, either temporary or permanently, of any injection or associated monitoring well within 15 days of such abandonment.</p> <p>Verify that, when temporarily abandoning injection wells, the following steps are taken:</p> <ul style="list-style-type: none"> - upon temporary removal from service, or prior to being put into service, the well is sealed with a water-tight cap or seal - the well is maintained whereby it is not a source or channel of contamination to an underground source of drinking water during its temporary status. <p>Verify that a well is repaired or permanently abandoned, as specified by the Director, within 30 days of receipt of notice from the Department stating that the well is acting as a source or channel of contamination to an underground source of drinking water.</p> <p>Verify that the following steps are taken when permanently abandoning injection wells:</p> <ul style="list-style-type: none"> - all casing and materials are removed prior to initiation of abandonment procedures if the Director finds such removal will not be responsible for, or contribute to, the contamination of an underground source of drinking water - any casing not grouted in accordance with well abandonment regulations (15A NCAC 2C.0113) are removed or properly grouted - the entire depth of the well is sounded before sealing to ensure no obstructions interfere - the well is thoroughly chlorinated prior to sealing if the Director determines that failure to do so could lead to contamination of an underground source of drinking water - the well is completely filled with cement grout introduced through a pipe extending to the bottom of the well that is raised as the well is filled - in the case of gravel-packed wells where the casing and screens have not been removed, the casing is perforated opposite the gravel pack at intervals not exceeding 10 ft, and grout is injected through the perforations - in those cases when, as a result of injection operations, a subsurface cavity has been created, the well is abandoned so as to prevent movement of fluids into or between underground sources of drinking water and in accordance with the terms and conditions of the permit. <p>(NOTE: All casing and materials may be removed prior to beginning abandonment procedures if the Director finds such removal will not be responsible for, or contribute to, contamination of an underground source of drinking water.)</p> <p>Verify that exploratory and/or test wells, constructed to obtain information regarding an injection well site, are permanently abandoned upon completion of</p>

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	<p>their exploratory or testing status.</p> <p>Verify that an injection well is permanently abandoned by the drilling contractor before removing his equipment from the site if, for any reason prior to injection, the casing has not been installed or has been removed from the well bore.</p>

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<p>UNDERGROUND INJECTION CONTROL (UIC)</p> <p>WQ.114. Class V Wells</p> <p>WQ.114.1.NC. Specific types of Class V injection wells are prohibited (15A NCAC 2C.0213(a) and (b)).</p> <p>WQ.114.2.NC. Types 5A, 5B, 5E, 5F, 5G, 5R, 5S, and 5X injection wells must meet specific location requirements (15A NCAC 2C.0213(c)).</p>	<p>Verify that the following types of Class V injection wells are not constructed or used:</p> <ul style="list-style-type: none"> - Type 5D - stormwater drainage well - Type 5H - gaseous hydrocarbon storage well - Type 5N - nuclear waste disposal or storage well - Type 5W - waste disposal well. <p>(NOTE: Construction or use of the following types of Class V injection wells may be approved by the Director provided they are not used or operated to inject any waste or contaminant and injection will not result in contamination of an underground source of drinking water:</p> <ul style="list-style-type: none"> - Type 5A - air conditioning/cooling water return well - Type 5B - salinity barrier well - Type 5E - wells used in experimental technologies - Type 5F - agricultural drainage well - Type 5G - other drainage wells - Type 5R - recharge well - Type 5S - subsidence control well - Type 5X - other Class V wells.) <p>Verify that Types 5A, 5B, 5F, 5G, 5R, 5S and 5X wells are located:</p> <ul style="list-style-type: none"> - in an area not generally subject to flooding - at a site that is well drained - at a site that permits access for maintenance, repair, treatment, testing, and such other attention as may be necessary - at a minimum horizontal distance of 50 ft from any water-tight sewage and liquid-waste collection facility (such as cast iron pipe) - at a minimum horizontal distance of 100 ft from any other sewage or liquid-waste collection and disposal facility (such as a septic tank and drain field) and any other source of potential pollution or contamination - at a minimum horizontal distance of 10 ft from any property boundary. <p>(NOTE: When the well is for a single family dwelling and the minimum horizontal separation distances are not feasible to obtain because of lot size or other fixed conditions, separation distances are the maximum feasible distance. However, in no case is the separation distance from any water-tight sewage and liquid-waste facility less than 25 ft, or the distance from other sewage or liquid</p>

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<p>WQ.114.3.NC. Grouting on Class V injection wells must meet specific standards (15A NCAC 2C.0213(e)).</p>	<p>waste collection and disposal facilities less than what is in conformity with all applicable Federal, state, and local laws and regulations.)</p> <p>Verify that Type 5E wells are located:</p> <ul style="list-style-type: none"> - suitably accessible for maintenance and monitoring purposes - a minimum horizontal distance of 100 ft from any sewage, liquid-waste collection, or disposal facility - a minimum horizontal distance of 100 ft from any property boundary - a minimum horizontal distance of 1000 ft from any water supply well and a minimum of 3000 ft from any well completed in the proposed injection zone furnishing water for municipal, industrial, commercial, agricultural, or domestic purposes - so that injection is into a formation with confining zones free of open faults or fractures within the area of review. <p>Verify that the annular space between the casing and borehole are grouted in accordance with all the following standards:</p> <ul style="list-style-type: none"> - with a type of cement that is nonreactive with formation and injected fluids - by a pressure method such that the physical and mechanical integrity of the well(s) is not threatened during its life expectancy - from land surface to the top of the injection zone or, in the case of Type 5A wells, from land surface to: <ul style="list-style-type: none"> - a minimum depth of 20 ft when the well is greater than 20 ft in depth - the top of the injection zone in those wells less than 20 ft in depth.
<p>WQ.114.4.NC. When drilling, casing, screening, or testing Class V injection wells specific procedures must be followed (15A NCAC 2C.0213(d)).</p>	<p>Verify that, when drilling, casing, screening, or testing, procedures are used such that:</p> <ul style="list-style-type: none"> - a casing is installed that extends from at least 12 in. above land surface to the top of the injection zone - methods and materials used are compatible with material(s) to be injected and approved by the Director - methods and materials used do not threaten the physical and mechanical integrity of the well during its lifetime - fluids do not migrate outside the injection zone or area - contaminants are not introduced into underground sources of drinking water. <p>Verify that the following steps are taken when testing all Class V wells, other than Type 5A:</p> <ul style="list-style-type: none"> - appropriate logs and records of other tests conducted during drilling and construction are kept - a descriptive report interpreting the results of such logs and tests is prepared by a knowledgeable log analyst and submitted to the Director

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<p>WQ.114.5.NC. The operation of Class V injection wells must meet specific standards (15A NCAC 2C.0213(f)).</p>	<ul style="list-style-type: none"> - minimally, logs and tests include deviation checks conducted on all holes where pilot holes and reaming are used, and at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling - when the injection zone is a waterbearing formation, the following information concerning the injection zone as determined or calculated by the owner is submitted to the Director in an integrated form: <ul style="list-style-type: none"> - fluid pressure - fluid temperature - fracture pressure - other physical and chemical characteristics of the zone - physical and chemical characteristics of formation fluids - compatibility of injected fluids with formation fluids - when the injection formation is not a water-bearing formation, only the following information is determined or calculated and submitted to the Director: <ul style="list-style-type: none"> - fracture pressure - other physical and chemical characteristics of the injection zone - monitoring wells, completed in the injection zone or in any adjacent zones which could be affected by injection operations, are located so as to detect any movement of the following: <ul style="list-style-type: none"> - injection fluids - process byproducts - formation fluids outside the injection area or zone - if the operation may be affected by subsidence or catastrophic collapse, monitoring wells are located so that they will not be physically affected, and are of an adequate number to detect movement of injected fluids, process byproducts, or formation fluids outside the injection zone or area - tests for mechanical integrity and injection capacity are conducted prior to any injection. <p>Verify that pressure at the well head is limited to a maximum which will assure that pressure in the injection zone does not initiate or cause any of the following:</p> <ul style="list-style-type: none"> - new fractures or propagate existing fractures in the injection zone - fractures in the confining zone - migration of injected or formation fluids outside the injection zone or area. <p>Verify that injection is not performed between the outermost casing protecting underground sources of drinking water and the well bore.</p> <p>Verify that, in order to prevent outside contaminants from entering the top of the casing, well-head completion is performed according to the following criteria:</p> <ul style="list-style-type: none"> - the top of the casing is cut off smooth and level, is free of dents and cracks, and terminates and is maintained at least 12 in. above land surface - all piping, wiring, and vents enter the well through the top of the casing - provisions are made for monitoring operating processes at the well head.

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<p>WQ.114.6.NC. Monitoring of Class V injection wells, other than Type 5A, must meet specific standards (15A NCAC 2C.0213(g)).</p>	<p>(NOTE: Monitoring of Type 5A wells is conducted as required by the Director.)</p> <p>Verify that samples and measurements taken for monitoring are representative of the monitored activity.</p> <p>Verify that analyses of physical and chemical characteristics of injected fluid are made monthly, or more frequently as necessary, to demonstrate representative data on its characteristics.</p> <p>Verify that monitoring of injection pressure, flow rate, and cumulative volume occurs daily.</p> <p>Verify that a demonstration of mechanical integrity is conducted at least once every yr during the life of the injection well.</p> <p>Verify that monitor wells associated with the injection site are monitored quarterly to detect any migration of injected fluids from the injection zone.</p>
<p>WQ.114.7.NC. Facilities operating Class V injection wells must meet specific reporting requirements (15A NCAC 2C.0213(h)) [Revised March 1998].</p>	<p>Verify that the facility submits to the Director, on forms furnished by the Director or in an alternate approved form, the following information:</p> <ul style="list-style-type: none"> - a record of construction or abandonment within 30 days of completion or abandonment, including: <ul style="list-style-type: none"> - the owner's name - well location, size, and depth - casing record - method of completion or abandonment - formation log - static water level - injection apparatus - records of any surveys, geophysical logs, tests, or water analyses - a record of any well repair within 30 days of repair, including: <ul style="list-style-type: none"> - the owner's name - the well location - the change in construction and materials replaced - quarterly reports on required monitoring activities, including: <ul style="list-style-type: none"> - date, exact place, and time of sampling or measurements - individual(s) who performed the sampling or measurements - date(s) analyses are performed - individual(s) who performed the analyses - analytical techniques or methods used - results of such sampling, measurements, or analyses.

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<p>WQ.115.</p> <p>WATER QUALITY STANDARDS</p> <p>WQ.115.1.NC. Facilities must not allow degradation of water quality standards (15A NCAC 2B.0201 and 2B.0205).</p> <p>WQ.115.2.NC. Facilities must comply with standards for carcinogens and non-carcinogens (15A NCAC 2B.0208 and 2B.0228) [Revised March 2004; Citation Revised March 2008].</p>	<p>Verify that the facility does not degrade, or allow the degradation of, the quality of waters with a quality higher than established standards to below that necessary to maintain existing and anticipated uses of those waters (see Appendix 13-6 for water classifications).</p> <p>(NOTE: Water quality standards are not considered violated when values outside the normal range are caused by natural conditions. Where wastes are discharged to such waters, the discharge is not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained and, therefore, meeting the established limits is beyond the discharger's control.)</p> <p>(NOTE: The standards of water quality contained in this section do not apply to waters within effluent channels, except that these waters are maintained at a quality which prevents the occurrence of offensive conditions, protects public health, and allows maintenance of standards applicable to all downstream waters.)</p> <p>Verify that the standards found in Appendix 13-7 are met in order to protect human health from carcinogens through the consumption of fish (and shellfish) only, applicable to all waters.</p> <p>Verify that determined concentrations for non-carcinogens are met.</p> <p>(NOTE: For non-carcinogens, concentrations will be determined using a Reference Dose (RfD) as published by the U.S. Environmental Protection Agency pursuant to Section 304(a) of the Federal Water Pollution Control Act as amended or a RfD issued by the U.S. Environmental Protection Agency as listed in the Integrated Risk Information System (IRIS) file or a RfD approved by the Director after consultation with the State Health director.)</p> <p>(NOTE: Aquatic life standards. The concentration of toxic substances shall not result in chronic toxicity. Any levels in excess of the chronic value will be considered to result in chronic toxicity. In the absence of direct measurements of chronic toxicity, the concentration of toxic substances shall not exceed the concentration specified by the fraction of the lowest LC50 value that predicts a no effect chronic level (as determined by the use of acceptable acute/chronic ratios). If an acceptable acute/chronic ratio is not available, then that toxic substance shall not exceed one-one hundredth (0.01) of the lowest LC50 or if it is affirmatively demonstrated that a toxic substance has a half-life of less than 96 hours the maximum concentration shall not exceed one-twentieth (0.05) of the lowest</p>

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<p>WQ.115.3.NC. Facilities must not cause or allow water quality standards for surface water to degrade (15A NCAC 2B.0211, 2B.0212, 2B.0213, 2B.0214, 2B.0215, 2B.0216, 2B.0217, 2B.0218, 2B.0219, 2B.0220, 2B.0221, 2B.0222, and 2B.0226) [Revised March 2004].</p>	<p>LC50.)</p> <p>(NOTE: The standards of water quality contained in this section do not apply to waters within effluent channels, except that these waters are maintained at a quality which prevents the occurrence of offensive conditions, protects public health, and allows maintenance of standards applicable to all downstream waters.)</p> <p>Verify that the facility does not allow or cause the standards found in Appendix 13-8 to be exceeded in any fresh surface water (basic standards applicable to Class C waters).</p> <p>(NOTE: See Appendix 13-6 for Water Classifications. The water quality standards for all fresh surface waters are the basic standards applicable to Class C waters. See Rule .0208 (see Appendix 13-7) for standards for toxic substances. Additional and more stringent standards applicable to other specific freshwater classifications, see Appendix 13-9 through 13-13 as listed below.)</p> <p>Verify that the facility does not cause the following waters to exceed the applicable water quality standards:</p> <ul style="list-style-type: none"> - Tidal Salt Water quality standards for Class SC Waters listed in Appendix 13-9 - Tidal Salt Water quality standards for Class SA Waters listed in Appendix 13-10 - Tidal Salt Water quality standards for Class SB Waters listed in Appendix 13-11 - Standards for Class WS-I Waters, Class WS-II Waters, Class WS-III Waters, Class WS-IV Waters, and Class WS-V Waters listed in Appendix 13-12 - Fresh Water quality standards for Class B Waters listed in Appendix 13-13. <p>(NOTE: Variances from applicable standards, revisions to water quality standards or site-specific water quality standards may be granted by the Commission on a case-by-case basis. A listing of existing variances will be maintained and made available to the public by the Division.)</p> <p>(NOTE: The standards of water quality contained in this section do not apply to waters within effluent channels, except that these waters are maintained at a quality which prevents the occurrence of offensive conditions, protects public health, and allows maintenance of standards applicable to all downstream waters.)</p>
<p>WQ.115.4.NC. [Deleted March 2004].</p>	<p>(NOTE: 15A NCAC 2L.0202 expired.)</p>

**COMPLIANCE CATEGORY:
WATER QUALITY MANAGEMENT
North Carolina Supplement**

REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
WQ.115.5.NC. Facilities must not degrade the quality of coastal waters (15A NCAC 7M.0801(a)).	Verify that land or water use by the facility does not cause degradation of water quality so as to impair traditional uses of the coastal waters.
WQ.115.6.NC. Discharges into Class GA and Class GSA groundwaters must meet specific standards (15A NCAC 2L.0202 (g) and (h)) [Added March 2006].	<p>(NOTE: The standards of water quality contained in this section do not apply to waters within effluent channels, except that these waters are maintained at a quality which prevents the occurrence of offensive conditions, protects public health, and allows maintenance of standards applicable to all downstream waters.)</p> <p>Verify that discharges into Class GA and Class GSA do not exceed the concentrations for substances listed in Appendix 12-10.</p> <p>Verify that substances which are not naturally occurring and for which no standard is specified is not present in detectable concentrations.</p> <p>(NOTE: The standards for GSA groundwaters are the same as Class GA groundwaters listed in Appendix 12-10 except the following:</p> <ul style="list-style-type: none"> - chloride: allowable increase not to exceed 100 percent of the natural quality concentration. - total dissolved solids: 1000 mg/l.) <p>(NOTE: Class GA waters are defined as groundwaters in the state naturally containing 250 mg/l or less of chloride. Class GSA waters are defined as groundwaters in the state naturally containing greater than 250 mg/l chloride.)</p>
WQ.115.7.NC. Discharges into Class GC groundwaters must meet specific standards (15A NCAC 2L.0202 (i)) [Added March 2006].	<p>Verify that the concentrations of substances which, at the time of classification exceed the standards applicable to Class GA or GSA groundwaters do not increase, or that the concentrations of other substances be caused to exceed the GA or GSA standards as a result of further disposal of contaminants to or beneath the surface of the land within the boundary of the area classified GC.</p> <p>Verify that the concentrations of substances which, at the time of classification, exceed the standards applicable to GA or GSA groundwaters do not migrate as a result of activities within the boundary of the GC classification, so as to violate the groundwater or surface water quality standards in adjoining waters of a different class.</p> <p>(NOTE: Class GC waters are defined as groundwaters assigned the classification GC in 15A NCAC 2L.0303 - .0318.)</p>
WQ.115.8.NC. Discharge into Class GA and Class GSA groundwaters must meet specific standards (15A NCAC 2L.0202 (g) and (h))	<p>Verify that discharges into Class GA and Class GSA do not exceed the concentrations for substances listed in Appendix 12-10.</p> <p>Verify that substances which are not naturally occurring and for which no standard is specified is not present in detectable concentrations.</p>

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT North Carolina Supplement	
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[Added March 2006].	<p>(NOTE: The standards for GSA groundwaters are the same as Class GA groundwaters listed in Appendix 12-10 except the following:</p> <ul style="list-style-type: none"> - chloride: allowable increase not to exceed 100 percent of the natural quality concentration. - total dissolved solids: 1000 mg/l.) <p>(NOTE: Class GA waters are defined as groundwaters in the state naturally containing 250 mg/l or less of chloride. Class GSA waters are defined as groundwaters in the state naturally containing greater than 250 mg/l chloride.)</p>

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WQ.120.</p> <p>WATER USE</p> <p>WQ.120.1.NC. In the Central Coastal Plain Capacity Use Area, the persons withdrawing groundwater in excess of 100,000 gal per day must have a water use permit (15A NCAC 2E.0502(a), (b), (g), (h) and (j)) [Revised March 2002].</p>	<p>(NOTE: Existing ground water withdrawal permits issued in Capacity Use Area No. 1 (15A NCAC 02E.0200) within the Central Coastal Plain Capacity Use Area are reissued under Section .0500 of this Subchapter and are valid until the expiration date specified in each permit. Water use permits are no longer required for withdrawals in Hyde and Tyrrell Counties as of 1 August 2002. Permits are not required for surface water use under Section .0500 of this Subchapter in the Central Coastal Plain Capacity Use Area as delineated in Rule .0501 of this Section (see applicability note above).)</p> <p>Verify that no person withdraws ground water after 1 August 2002 in excess of 100,000 gal per day by a well, group of wells operated as a system, or sump for any purpose unless without first obtaining a water use permit from the Director.</p> <p>(NOTE: Existing withdrawals of ground water as of the effective date of this Rule and proposed withdrawals previously approved for funding appropriated pursuant to the "Clean Water and Natural Gas Critical Needs Bond Act of 1998" or other local, state or federally funded projects as of the effective date of this Rule will be allowed to proceed with construction or to continue to operate under interim status until a permit has been issued or denied by the Director, provided that persons withdrawing in excess of 100,000 gal per day by a well, group of wells operated as a system, or sump comply with the following requirements:</p> <ul style="list-style-type: none"> - persons conducting withdrawals in the Capacity Use Area that require a permit submit a permit application to the Division of Water Resources within 180 days of 1 August 2002 - persons who have submitted applications will provide any additional information requested by the Division of Water Resources for processing of the permit application within 30 days of the receipt of that request - persons conducting withdrawals in the Capacity Use Area that require a permit will submit water level and water use data on a form supplied by the Division 4 times a year, within 30 days of the end of March, June, September, and December until a permit has been issued or denied by the Division of Water Resources.) <p>Verify that persons holding a permit submit signed water usage and water level reports to the Director not later than 30 days after the end of each permit reporting period as specified in the permit.</p> <p>Verify that water use permit holders do not add new wells without prior approval from the Director.</p> <p>Verify that, for all water uses other than dewatering of mines, pits or quarries, withdrawals are permitted only from wells that are constructed such that the pump intake or intakes are at a shallower depth than the top of the uppermost confined</p>

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	<p>aquifer that yields water to the well.</p> <p>(NOTE: Declaration And Delineation Of Central Coastal Plain Capacity Use Area (15A NCAC 2E.0501): The area encompassed by the following 15 North Carolina counties and adjoining creeks, streams, and rivers is hereby declared and delineated as the Central Coastal Plain Capacity Use Area: Beaufort, Carteret, Craven, Duplin, Edgecombe, Greene, Jones, Lenoir, Martin, Onslow, Pamlico, Pitt, Washington, Wayne and Wilson. The Environmental Management Commission finds that the use of ground water requires coordination and limited regulation in this delineated area for protection of the public interest. The intent of this Section is to protect the long term productivity of aquifers within the designated area and to allow the use of ground water for beneficial uses at rates which do not exceed the recharge rate of the aquifers within the designated area.)</p>
<p>WQ.120.2.NC. In the Central Coastal Plain Capacity Use Area, persons withdrawing more than 10,000 gal of surface or groundwater per day must meet registration requirements (15A NCAC 2E.0505) [Revised March 2002].</p>	<p>(NOTE: This checklist item does not apply to persons subject to the requirements of WQ.120.1.NC.)</p> <p>Verify that, as of 1 August 2002, any person who is not subject to Rule .0502 (see WQ.120.1.NC.) of this Section and withdraws more than 10,000 gal per day from surface or ground water in the Central Coastal Plain Capacity Use Area, registers such withdrawals on a form supplied by the Division and complies with the following provisions:</p> <ul style="list-style-type: none"> - constructs new wells such that the pump intake or intakes are above the top of the uppermost confined aquifer that yields water to the well - reports surface and ground water use to the Division of Water Resources on an annual basis on a form supplied by the Division - withdraws water in a manner that does not damage the aquifer or cause salt water encroachment or other adverse impacts. <p>(NOTE: These requirements do not apply to withdrawals to supply an individual domestic dwelling.)</p> <p>(NOTE: Agricultural water users may either register water use with the Division of Water Resources as provided in this Rule or provide the information to the North Carolina Department of Agriculture and Consumer Services.)</p>
<p>WQ.120.3.NC. [Deleted March 2002].</p>	<p>(NOTE: Regulation repealed.)</p>
<p>WQ.120.4.NC. In Capacity Use Area no 1, persons withdrawing more than 100,000 gal of surface or</p>	<p>Verify that no person withdraws, obtains, or utilizes surface waters or ground waters, or both, in excess of 100,000 gallons per day for any purpose without permit from the Director.</p>

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<p>groundwater per day must meet registration requirements (15A NCAC 2E.0201 and 2E.0202) [Added March 2004].</p>	<p>(NOTE: Capacity Use Area No. 1--That area bounded by a line beginning at the intersection of Highway US 17 and Roanoke River, at Williamston, and running south along Highway US 17 to the Martin-Beaufort Counties line; thence northwest along the Martin-Beaufort Counties line to the Pitt County line; thence generally south along the Pitt- Beaufort Counties line to the Craven County line; thence southwest along the Pitt-Craven Counties line to the Neuse River; thence southeast along the Neuse River to New Bern; thence south along Highway US 70 to Morehead City and on to Atlantic; thence north along the eastern edge of Cedar Island, across Pamlico Sound, along the eastern edge of Great Island, to the intersection of Highways US 264 and NC 94 near the south shore of Lake Mattamuskeet; thence north along Highway NC 94 to Columbia; thence west along the south shore of Albemarle Sound to the mouth of Roanoke River; thence generally southwest along Roanoke River to Highway US 17 at Williamston, the beginning)</p>
<p>WQ.120.5.NC. Water systems, water users, state agencies, and local government must report water use (15A NCAC 2E.0603(a) and (c) and 2E.0604, and NCGSA 143-355(l) and 143-215.22H(a) and (c)) [Added March 2008].</p>	<p>(NOTE: This checklist item applies to the following classes of water users:</p> <ul style="list-style-type: none"> - publicly owned and privately owned water supply systems - state agencies - units of local government - business and industrial water users - agricultural and horticultural water users.) <p>(NOTE: All established and new uses of reclaimed water, consistent with the provisions of 15A NCAC 2H .0200 (Procedures for Permits: Approvals) and any successive rules and amendments that define and the use of reclaimed water are exempt.)</p> <p>Verify that water systems that are required to prepare a local water supply plan annually report to the Department the following information, irrespective of the issuance of a drought advisory:</p> <ul style="list-style-type: none"> - water system identification information - annual average daily water use (total amount of surface and ground water withdrawn as well as water supplied by another system) by the water system, in million gallons per day (MGD) - the average daily water use (total amount of surface and ground water withdrawn as well as water supplied by another system) for each month of the prior calendar year, in MGD - the number of connections for residential, industrial, commercial and institutional metered and non-metered water use, as of December 31st of the reporting year - the annual average daily water use in MGD categorized by residential, industrial, commercial, institutional water uses and sales to other systems to the extent that this information by category is available - water used by the system, in addition to the amount delivered to customers, to meet water treatment and distribution requirements, in MGD. <p>(NOTE: Each unit of local government that provides public water service and</p>

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<p>WQ.120.6.NC. Reporting and coordination procedures must be followed during a drought or other water supply emergency (15A NCAC 2E.0605) [Added March 2008].</p>	<p>each community water system must prepare a local water supply plan.)</p> <p>Verify that all persons that are required to register water withdrawals and transfers report annually to the Department monthly average water use in MGD for each month including the following information:</p> <ul style="list-style-type: none"> - owner and facility identification information - sources of water withdrawn - number of days water was withdrawn for each month - average daily withdrawal for the actual number of days water was withdrawn each month, in MGD. <p>(NOTE: Any person who withdraws 100,000 gallons per day or more of water from the surface or groundwaters of the State or who transfers 100,000 gallons per day or more of water from one river basin to another must register the withdrawal or transfer with the Commission. A person who withdraws or transfers less than 1,000,000 gallons per day of water for activities directly related or incidental to the production of crops, fruits, vegetables, ornamental and flowering plants, dairy products, livestock, poultry, and other agricultural products is exempt from the registration requirement.)</p> <p>Verify that the data is submitted to the Department by April 1st of each year for the period of January 1st to December 31st of the prior year.</p> <p>(NOTE: See WQ.120.5.NC. for applicability and exemptions.)</p> <p>Verify that publicly and privately owned community water systems and units of local government report to the Division of Water Resources the implementation of mandatory water conservation measures within 72 hours of their initial enactment.</p> <p>Verify that all persons, that intend to make a new water withdrawal of 100,000 gallons or more in an area designated as suffering from extreme or exceptional drought, and that has not previously been registered, reports to the Division of Water Resources the following information at least 7 days prior to the withdrawal:</p> <ul style="list-style-type: none"> - contact information for the person making the water withdrawal - source(s) of water to be withdrawn - number of days water is anticipated to be withdrawn - anticipated average daily withdrawal in MGD. <p>Verify that all persons that withdraw water monitor, drought and water supply conditions and participate in regional coordination for the management of water resources, evaluation of the cumulative effects of water withdrawals on regional water resources and the development of alternative water supply sources.</p>

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
WQ.120.7.NC. All classes of water users must meet water shortage response planning requirements (15A NCAC 2E.0606 and 2E.0607(a) through d)) [Added March 2008].	<p>(NOTE: See WQ.120.5.NC. for applicability and exemptions.)</p> <p>Verify that all classes of water users prepare a water shortage response plan for their appropriate class of water use.</p> <p>Verify that publicly and privately owned water systems that are required to prepare a local water supply plan (see WQ.120.5.NC.) include the following information in their local water shortage response plans for review by the Division of Water Resources:</p> <ul style="list-style-type: none"> - the designation of a staff position or organizational unit responsible for the implementation of their water shortage response plan - notification procedures that will be used to inform employees and water users about the implementation of the plan and required water conservation response measures - tiered levels of response actions to be taken to reduce water use based on the severity of water shortage conditions - specific measurements of available water supply, water demand and system conditions that will be used to determine the severity of water shortage conditions and to initiate water use reduction measures and the movement between various levels - procedures that will be used to regulate compliance - procedures for affected parties to review and comment on the plan - procedures to receive and review applications for variances from specific requirements of the plan and the criteria that will be considered in the determination to issue a variance - an evaluation method to determine the actual water savings accomplished and the effectiveness of the water shortage response plan when implemented - procedures for revising and updating water shortage response plans. <p>Verify that publicly and privately owned water systems submit a copy of their water shortage response plan for review every 5 years with the full local water supply plan.</p> <p>Verify that publicly and privately owned water systems not required to prepare a local water supply plan do the following:</p> <ul style="list-style-type: none"> - assess their vulnerability to drought and water shortage emergencies - prepare a written plan for responding to water shortage emergencies and drought. <p>Verify that publicly and privately owned water systems that depend on the water storage in a private or public impoundment that they do not own and operate under a contract for the withdrawal of water issued by the owner of an impoundment prepare a written plan for responding to water shortages that is consistent with the provisions of the contract and comply with all water shortage response plan provisions established by the owner of the impoundment.</p>

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
WQ.120.8.NC. Publicly and privately owned water system must meet water shortage response requirements (15A NCAC 2E.0607(f)) [Added March 2008].	<p>(NOTE: See WQ.120.5.NC. for applicability and exemptions.)</p> <p>Verify that, when an area of the state is designated as currently suffering from drought, publicly and privately owned water systems that depend on water from the designated area implement the following actions for the duration of the designation:</p> <ul style="list-style-type: none"> - implement the provisions of their water shortage response plan - monitor and document water supply conditions - educate customers and employees on the need to conserve water and how to prepare for potential drought conditions - inspect water delivery system components and ensure that existing equipment is operating as efficiently as possible - stay informed on drought and water shortage emergency conditions and participate in regional coordination for the management of water resources - evaluate the feasibility of reclaiming and recycling water to meet water needs.
WQ.120.9.NC. State agencies must meet water shortage response planning requirements (15A NCAC 2E.0608) [Added March 2008].	<p>(NOTE: See WQ.120.5.NC. for applicability and exemptions.)</p> <p>Verify that state agencies that supply their own water prepare a written plan for responding to water shortages.</p> <p>Verify that state agencies that are supplied water by a publicly or privately owned water system meet the following requirements:</p> <ul style="list-style-type: none"> - review normal operating procedures and water use to identify options to reduce water use and maximize water use efficiency during water supply emergencies, including changes to normal operating procedures - provide information to their water purveyor(s) upon request to support development of the purveyor's Water Shortage Response Plan(s), including the agency's ability to reduce water use and limitations to reducing water use during droughts and water emergencies - develop procedures for informing employees of drought designations, water emergency declarations and response measures - evaluate the feasibility of reclaiming and recycling water to meet water needs.
WQ.120.10.NC. Local governments must meet water shortage response planning requirements (15A NCAC 2E.0609) [Added March 2008].	<p>(NOTE: See WQ.120.5.NC. for applicability and exemptions.)</p> <p>Verify that units of local government that provide water to the public meet the requirements specified in WQ.120.7.NC.</p> <p>Verify that units of local government that do not provide water to the public meet the following requirements:</p>

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<p>WQ.120.11.NC. Business and industrial water users must meet water shortage response planning requirements (15A NCAC 2E.0610 and NCGSA 143-217.22H(a)) [Added March 2008].</p> <p>WQ.120.12.NC. Agricultural and horticultural water users must meet water shortage response planning requirements(15A NCAC 2E.0611 and NCGSA 143-215.22H(b)) [Added March 2008].</p>	<ul style="list-style-type: none"> - review normal water use for the types and number of facilities operated to identify options to reduce water use and maximize water use efficiency - cooperate with local water purveyor(s) on the development and implementation of the purveyor's water shortage response plan(s) - establish a procedure for informing citizens of drought designations, recommended conservation activities and mandatory response measures to reduce water use during droughts and water shortage emergencies - provide a mechanism whereby residents can apply for and receive a variance from specific water use reduction requirements - consider disproportionate hardships that water shortage response policies and ordinances may cause water users who have already made improvements to maximize water use efficiency in their daily operations - evaluate the feasibility of reclaiming and recycling water to meet water needs. <p>(NOTE: See WQ.120.5.NC. for applicability and exemptions.)</p> <p>Verify that self-supplied business and industrial water users that withdraw 100,000 gallons per day or more of water from the surface or groundwaters of the State or who transfer 100,000 gallons per day or more of water from one river basin to another prepare a written plan, for responding to water shortages that is consistent with industry water efficiency and drought response guidelines.</p> <p>Verify that business and industrial water users that depend on the water storage of a privately or publicly owned impoundment or withdraw water under a contract issued by the owner of an impoundment have a written plan for responding to water shortages that is consistent with the provisions of the contract and with any Water Shortage Response Plan provisions established by the owner of the impoundment.</p> <p>Verify that business and industrial water users that are supplied water by a publicly or privately owned water system establish a procedure for responding to water shortages that is complementary to their water purveyor's Water Shortage Response Plan.</p> <p>Verify that agricultural and horticultural water users that withdraw or transfer less than 1,000,000 gallons per day of water for activities directly related or incidental to the production of crops, fruits, vegetables, ornamental and flowering plants, dairy products, livestock, poultry, and other agricultural products develop a written plan for responding to water shortages to maximize water use efficiency and reduce water usage to the maximum extent possible.</p> <p>Verify that, when a region of the state is designated as suffering from severe drought, extreme drought or exceptional drought, agricultural and horticultural water users reexamine and maintain water delivery systems to minimize water</p>

COMPLIANCE CATEGORY: WATER QUALITY MANAGEMENT North Carolina Supplement	
REGULATORY REQUIREMENTS:	REVIEWER CHECKS: March 2010
<p>WQ.120.13.NC. Publicly or privately owned water systems that do not have a written shortage response plan must implement default water shortage response planning measures when located in an area designated as suffering from extreme or exceptional drought (15A NCAC 2E.0612) [Added March 2008].</p>	<p>loss and maximize water use efficiency.</p> <p>Verify that agricultural and horticultural water users that depend on the water storage of a privately or publicly owned impoundment or withdraw water under a contract issued by the owner of an impoundment have a written plan for responding to water shortages that is consistent with the provisions of the contract and with any Water Shortage Response Plan provisions established by the owner of the impoundment.</p> <p>(NOTE: See WQ.120.5.NC. for applicability and exemptions.)</p> <p>(NOTE: This checklist item applies to publicly or privately owned water systems that meet the following conditions:</p> <ul style="list-style-type: none"> - are required to prepare a local water supply plan - do not have a written water shortage response plan - located in an area designated as suffering from extreme drought.) <p>Verify that default water shortage response measures are implemented in areas designated as suffering from extreme or exceptional drought.</p> <p>(NOTE: Default waster shortage response measures are specified in Appendix 13-17.)</p>

Appendix 13-1

Separation Distances Between Water Supply Wells and Sources of Contamination

(Source: 15A NCAC 2C.0107(a)) [Revised February 1999; Revised March 2003; Revised March 2010]

- (1) The water supply well shall not be located in an area generally subject to flooding. Areas that have a propensity for flooding include those with concave slope, alluvial or colluvial soils, gullies, depressions, and drainage ways;
- (2) The minimum horizontal separation between a water supply well and potential sources of groundwater contamination, which exist at the time the well is constructed, is as follows unless otherwise specified:

(A) Septic tank and drainfield, including drainfield repair area	100 ft
(B) Other subsurface ground absorption waste disposal system	100 ft
(C) Industrial or municipal sludge-spreading or wastewater-irrigation sites	100 ft
(D) Sewage or liquid-waste collection or transfer facility constructed to water main standards in accordance with 15A NCAC 02T .0305(g)(2) or 15A NCAC 18A .1950(e), as applicable	50 ft
(E) Other sewage and liquid-waste collection or transfer facility	100 ft
(F) Cesspools and privies	100 ft
(G) Animal feedlots or manure piles	100 ft
(H) Fertilizer, pesticide, herbicide or other chemical storage areas	100 ft
(I) Non-hazardous waste storage, treatment or disposal lagoons	100 ft
(J) Sanitary landfills municipal solid waste landfill facilities, incinerators, construction and demolition (C&D) landfills and other disposal sites except Land Clearing and Inert Debris landfills	500 ft
(K) Land Clearing and Inert Debris (LCID) landfills	100 ft
(L) Animal barns	100 ft
(M) Building foundations, excluding the foundation of a structure housing the well head	25 ft
(N) Surface water bodies that act as sources of groundwater recharge, such as ponds, lakes and reservoirs	50 ft
(O) All other surface water bodies, such as brooks, creeks, streams, rivers, sounds, bays and tidal estuaries	25 ft
(P) Chemical or petroleum fuel underground storage tanks regulated under 15A NCAC 02N:	
(i) with secondary containment	50 ft
(ii) without secondary containment	100 ft
(Q) Above ground or underground storage tanks which contain petroleum fuels used for heating equipment, boilers or furnaces	50 ft
(R) All other petroleum or chemical storage tank systems	100 ft
(S) Gravesites	50 ft
(T) All other potential sources of groundwater contamination	50 ft

- (3) For a water supply well [as defined in G. S. 87-85(13)] on a lot serving a single-family dwelling and intended for domestic use, where lot size or other fixed conditions preclude the separation distances specified in Subparagraph (a)(2) of this Rule, the required horizontal separation distances shall be the maximum possible but shall in no case be less than the following:

(A) Septic tank and drainfield	50 ft.
(B) Water-tight sewage or liquid-waste collection or transfer facility	25 ft.
(C) Animal barns	50 ft.

Minimum separation distances for all other potential sources of groundwater contamination shall be those specified in Subparagraph (a)(2) of this Rule.

- (4) In addition to the minimum separation distances specified in Subparagraph (a)(2) of this Rule, a well or well system with a designed capacity of 100,000 gpd or greater shall be located a sufficient distance from known or anticipated sources of groundwater contamination so as to prevent a violation of applicable groundwater quality standards, resulting from the movement of contaminants, in response to the operation of the well or well system at the proposed rate and schedule of pumping.
- (5) Wells drilled for public water supply systems regulated by the Division of Environmental Health shall meet the requirements of 15A NCAC 18C.

Appendix 13-2

Designated Areas Where Wells May be Cased to Less than 20 Feet

(Source: 15A NCAC 2C.0116(b))

- In Currituck County on Terres Quarter Island and in an area between the sound and a line beginning at the end of SR 1130 near Currituck Sound, thence north to the end of SR 1133, thence north to the end of NC 3 at the intersection with the sound.
- On the Outer Banks from the northern corporate limit of Nags Head on Bodie Island, south to Ocracoke Inlet.
- All areas lying between the Intercoastal Waterway and the ocean from New River Inlet south to New Topsail Inlet.
- All areas lying between the Intercoastal Waterway and the ocean from the Cape Fear River south to the South Carolina line.

Appendix 13-3

Designated Areas Where Wells May Be Cased to a Minimum Depth of 35 Feet

(Source: 15A NCAC 2C.0117) [Revised March 2010].

Water supply wells constructed in the following areas or within 400 feet of the following areas shall be cased to a minimum depth of 35 feet:

- (1) Anson County generally west of a line beginning at the intersection of the runs of the Pee Dee River and Buffalo Creek, thence generally northeast to SR 1627, thence generally south along SR 1627 to the intersection with SR 1632, thence generally west along SR 1632 to the intersection with US 52, thence generally south along US 52 to the intersection with SR 1418, thence generally southwest along SR 1418 to the intersection of NC 218, thence south along NC 218 to the intersection with US 74, thence generally west along US 74 to the intersection of SR 1251, thence generally southwest along SR 1251 to the intersection with SR 1240, thence generally southeast along SR 1240 to the intersection with SR 1252, thence generally south along SR 1252 to the intersection with SR 1003, thence generally west along SR 1003 to the Union County line;
- (2) Cabarrus County generally east of a line beginning at the intersection of SR 1113 and the Union County line, thence generally northeast along SR 1113 to the intersection with SR 1114, thence generally east along SR 1114 to the Stanly County line, thence generally northeast along the county line to the intersection with SR 1100, thence generally northeast along SR 1100 to the intersection of with SR 2622, thence generally southeast along SR 2622 to the intersection with SR 2617, thence generally northeast along SR 2617 to the intersection with SR 2611, thence generally north along SR 2611 to the intersection with NC 73, thence generally east along NC 73 to the intersection with SR 2453, thence generally northeast along SR 2453 to the intersection with SR 2444, thence generally northeast along SR 2444 to the Rowan County line;
- (3) Davidson County generally east of a line starting at the intersection of the runs of Abbotts Creek and the Yadkin River in High Rock Lake, thence generally north along Abbotts Creek to NC 8 bridge, thence generally north along NC 8 to the intersection with Interstate 85, thence generally northeast along Interstate 85 to the intersection with US 64, thence generally southeast along US 64 to the Randolph County line;
- (4) Montgomery County generally west of a line beginning at the intersection of SR 1134 with the Randolph County line, thence generally south along SR 1134 to the intersection with SR 1303, thence generally south along SR 1303 to the intersection with NC 109, thence generally southeast along NC 109 to the intersection with SR 1150, thence generally south along SR 1150 to the intersection with NC 73, thence generally southeast along NC 73 to the intersection with SR 1227, thence generally east along SR 1227 to the intersection with SR 1130, thence generally northeast along SR 1130 to the intersection with SR 1132, thence generally southeast along SR 1132 to the intersection with SR 1174, thence generally east along SR 1174 to the intersection with NC 109, thence generally north along NC 109 to the intersection with SR 1546, generally southeast along SR 1546 to the intersection of SR 1543, thence generally south along SR 1543 to the intersection with NC 731, thence generally west along NC 731 to the intersection with SR 1118, thence generally southwest along SR 1118 to the intersection with SR 1116, thence generally west along SR 1116 to the intersection with NC 109, thence generally south along NC 109 to the intersection with the Richmond County line;
- (5) Randolph County generally west of a line beginning at the intersection of US 64 with the Davidson County line, thence generally east along US 64 to the intersection with NC 49, thence generally southwest along NC 49 to the intersection with SR 1107, thence generally south along SR 1107 to the intersection with SR 1105, thence southeast along SR 1105 to the intersection with the Montgomery County line;
- (6) Rowan County generally east of a line beginning at the intersection of SR 2352 with the Cabarrus County line, thence generally northeast along SR 2352 to the intersection with SR 2353, thence generally north along SR 2353 to the intersection with SR 2259, thence generally northeast along SR 2259 to the intersection with SR 2142, thence north along SR 2142 to the intersection with SR 2162, thence generally northeast along SR 2162 to the intersection with the run of the Yadkin River in High Rock Lake;

(7) Union County generally east of a line beginning at the intersection of SR 1117 with the South Carolina-North Carolina State line, thence generally north along SR 1117 to the intersection with SR 1111, thence generally northwest along SR 1111 to the intersection with NC 75, thence generally northwest along NC 75 to the intersection with NC 16, thence generally north along NC 16 to the intersection with SR 1008, thence generally northeast along SR 1008 to the intersection with SR 1520, thence generally northeast along SR 1520 to the intersection with NC 218, thence generally east along NC 218 to the intersection with US 601, thence generally north along US 601 to the intersection with SR 1600, thence generally northeast along SR 1600 to the intersection with the Cabarrus County line;

(8) Stanly County -- all.

Appendix 13-4

Minimum Wall Thickness for Casing of Water Wells

(Source: 15A NCAC 2C.0107(d)(1)(C))

Nominal Diameter (in.)	Wall Thickness (in.)
For 3-1/2 in. or smaller pipe, schedule 40 is required	
4	0.142
5	0.156
5-1/2	0.164
6	0.185
8	0.250
10	0.279
12	0.330
14 and larger	0.375

Appendix 13-5

Maximum Allowable Depths (in Feet) of Installation of Thermoplastic Water Well Casing (Source: 15A NCAC 2C.0107(d)(2)(C)) [Revised March 2010].

Schedule Number	Nominal Diameter (in.)											
	2	2.5	3	3.5	4	5	6	8	10	12	14	16
40	485	635	415	315	253	180	130	85	65	65	50	50
80	1460	1685	1170	920	755	550	495	340	290	270	265	255

	Maximun Depth (in feet) for SDR 21	Maximun Depth (in feet) for SDR 17	Maximun Depth (in feet) for SDR 23.5
All Distances	185	355	735

Appendix 13-6

Water Classifications

(Source: 15A NCAC 2B.0101(c), (d), and (e))

- **Freshwater Classifications**
 1. Class C - freshwaters protected for secondary recreation, fishing, aquatic life including propagation and survival, and wildlife; all freshwaters are classified to protect these uses at a minimum.
 2. Class B - freshwaters protected for primary recreation which includes swimming on a frequent or organized basis and all Class C uses
 3. Class WS-I - waters protected as water supplies which are essentially in natural and undeveloped watersheds in public ownership; point source discharges of treated wastewater are permitted pursuant to Rules .0104 and .0211 of Subchapter 2B; local programs to control nonpoint sources and stormwater discharges of pollution are required; suitable for all Class C uses.
 4. Class WS-II - waters protected as water supplies which are generally in predominantly undeveloped watersheds; point source discharges of treated wastewater are permitted pursuant to Rules .0104 and .0211 of Subchapter 2B; local programs to control nonpoint sources and stormwater discharges of pollution are required; suitable for all Class C uses.
 5. Class WS-III - waters protected as water supplies which are generally in low to moderately developed watersheds; point source discharges of treated wastewater are permitted pursuant to Rules .0104 and .0211 of Subchapter 2B; local programs to control nonpoint sources and stormwater discharges of pollution are required; suitable for all Class C uses.
 6. Class WS-IV - waters protected as water supplies which are generally in moderately to highly developed watersheds; point source discharges of treated wastewater are permitted pursuant to Rules .0104 and .0211 of Subchapter 2B; local programs to control nonpoint sources and stormwater discharges of pollution are required; suitable for all Class C uses.
 7. Class WS-V - waters protected as water supplies which are generally upstream of and draining to Class WS-IV waters; or previously used for drinking water supply purposes or waters used by industry to supply their employees, but not municipalities or counties, with a raw drinking water supply source, although this type of use is not restricted to a WS-V classification. The Commission may consider a more, protective classification for the water supply if a resolution requesting a more protective classification is submitted from all local governments having land use jurisdiction in the affected watershed; no categorical restrictions on watershed development or treated wastewater discharges are required; however, the Commission or its designee, may apply appropriate management requirements as deemed necessary for the protection of downstream receiving waters (15A NCAC 2B.0203); suitable for all Class C uses.
- **Tidal Salt Water Classifications.**
 1. Class SC - saltwater protected for secondary recreation, fishing, aquatic life including propagation and survival, and wildlife; all saltwaters are classified to protect these uses at a minimum.
 2. Class SB - saltwaters protected for primary recreation which includes swimming on a frequent or organized basis and all Class SC uses.
 3. Class SA - suitable for commercial shellfishing and all other tidal saltwater uses.
- **Supplemental Classifications.**
 1. Trout waters (Tr) - freshwaters protected for natural trout propagation and survival of stocked trout
 2. Swamp waters (Sw) - waters which have low velocities and other natural characteristics which are different from adjacent streams.
 3. Nutrient Sensitive Waters (NSW) - waters subject to growths of microscopic or macroscopic vegetation requiring limitations on nutrient inputs.
 4. Outstanding Resource Waters (ORW) - unique and special waters of exceptional state or national recreational or ecological significance which require special protection to maintain existing uses; no new discharges or expanded discharges will be permitted into these waters.
 5. High Quality Waters (Hqw) - waters rated as excellent based on biological and physical/chemical characteristics through Division monitoring or special studies, native and special native trout waters (and

their tributaries) designated by the Wildlife Resources Commission, primary nursery areas (PNA) designated by the Marine Fisheries Commission and other functional nursery areas designated by the Wildlife Resources Commission, critical habitat areas designated by the Wildlife Resources Commission or the Department of Agriculture, all water supply watersheds classified as either WS-I or WS-II or those for which a formal petition for reclassification as WS-I or WS-II has been received from the appropriate local government and accepted by the Division of Environmental Management, and all Class SA waters.

6. Future Water Supply (FWS) - waters that have been requested by a local government and adopted by the Commission as a future source for drinking, culinary, or food-processing purposes. Local government(s) requesting this reclassification must provide to the Division evidence of intent which may include one or a combination of the following: capital improvement plans, a Water Supply Plan as described in G.S. 143-355(l), bond issuance for the water treatment plant or land acquisition records. A 1:24,000 scale U.S. Geological Survey topographical map delineating the location of the intended water supply intake is also required. Requirements for activities administered by the State of North Carolina, such as the issuance of permits for landfills, NPDES wastewater discharges, land application of residuals, and road construction activities will be effective upon reclassification for future water supply use. The requirements shall apply to the critical area and balance of the watershed or protected area as appropriate. Upon receipt of the final approval letter from the Division of Environmental Health for construction of the water treatment plant and water supply intake, the Commission will initiate rule-making to modify the Future, Water Supply supplemental classification. Local government implementation is not required until 270 days after the Commission has modified the Future Water Supply (FWS) supplemental classification through the rulemaking process and notified the affected local government(s) that appropriate local government land use requirements applicable for the water supply classifications are to be adopted, implemented, and submitted to the Commission for approval. Local governments may also adopt land use ordinances that meet or exceed the state's minimum requirements for water supply watershed protection prior to the end of the 270 day deadline. The requirements for FWS may also be applied to waters formerly used for drinking water supply use, and currently classified for water supply use, at the request of local government(s) desiring protection of the watershed for future, water supply use.

Appendix 13-7

Water Quality Standards for Carcinogens

(Source: 15 NCAC 2B.0208 (a)(2)(B)) [Revised March 2004; Revised March 2008]

- Standards to protect human health from carcinogens through the consumption of fish (and shellfish) only are applicable to all waters as follows:

(i) Aldrin	0.05 ng/l
(ii) Arsenic	10 ug/l
(iii) Benzene	51 ug/l
(iv) Carbon tetrachloride	1.6 ug/l
(v) Chlordane	0.8 ng/l
(vi) DDT	0.2 ng/l
(vii) Dieldrin	0.05 ng/l
(viii) Dioxin	0.000005 ng/l
(ix) Heptachlor	0.08 ng/l
(x) Hexachlorobutadiene	18 ug/l
(xi) Polychlorinated biphenyls (total of all identified PCBs and congeners)	0.064 ng/l
(xii) Polynuclear aromatic hydrocarbons (total of all PAHs)	31.1 ng/l
(xiii) Tetrachloroethane (1,1,2,2)	4 ug/l
(xiv) Tetrachloroethylene	3.3 ug/L
(xvi) Trichloroethylene	30 ug/l
(xvii) Vinyl chloride	2.4 ug/l.

(NOTE: The values listed above may be adjusted by the Commission or its designee on a case-by-case basis to account for site-specific or chemical-specific information pertaining to the assumed bioconcentration factor (BCF), fish consumption rate (FCR) (assumed to be 6.5 gm/person-day), or Carcinogenic Potency Factor (CPF) values or other data.)

Appendix 13-8

Fresh Surface Water Quality Standards for Class C Waters

(Source 15A NCAC 2B.0211) [Revised March 2004; Revised March 2008]

(NOTE: The water quality standards for all fresh surface waters are the basic standards applicable to Class C waters. See Rule .0208 (see Appendix 13-7) for standards for toxic substances and temperature. Additional and more stringent standards applicable to other specific freshwater classifications are specified in Rules .0212, .0214, .0215, .0216, .0217, .0218, (see Appendix 13-12) .0219 (see Appendix 13-13), .0223, .0224 and .0225 (High and Outstanding Resource Waters, respectively).)

(1) Best Usage of Waters: aquatic life propagation and maintenance of biological integrity (including fishing and fish), wildlife, secondary recreation, agriculture and any other usage except for primary recreation or as a source of water supply for drinking, culinary or food processing purposes;

(2) Conditions Related to Best Usage: the waters shall be suitable for aquatic life propagation and maintenance of biological integrity, wildlife, secondary recreation, and agriculture. Sources of water pollution which preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard;

(3) Quality standards applicable to all fresh surface waters:

(a) Chlorophyll a (corrected): not greater than 40 ug/l for lakes, reservoirs, and other waters subject to growths of macroscopic or microscopic vegetation not designated as trout waters, and not greater than 15 ug/l for lakes, reservoirs, and other waters subject to growths of macroscopic or microscopic vegetation designated as trout waters (not applicable to lakes or reservoirs less than 10 acres in surface area). The Commission or its designee may prohibit or limit any discharge of waste into surface waters if, in the opinion of the Director, the surface waters experience or the discharge would result in growths of microscopic or macroscopic vegetation such that the standards established pursuant to this Rule would be violated or the intended best usage of the waters would be impaired;

(b) Dissolved oxygen: not less than 6.0 mg/l for trout waters; for non-trout waters, not less than a daily average of 5.0 mg/l with a minimum instantaneous value of not less than 4.0 mg/l; swamp waters, lake coves or backwaters, and lake bottom waters may have lower values if caused by natural conditions;

(c) Floating solids, settleable solids, or sludge deposits: only such amounts attributable to sewage, industrial wastes or other wastes as shall not make the water unsafe or unsuitable for aquatic life and wildlife or impair the waters for any designated uses;

(d) Gases, total dissolved: not greater than 110 percent of saturation;

(e) Organisms of the coliform group: fecal coliforms shall not exceed a geometric mean of 200/100ml (MF count) based upon at least five consecutive samples examined during any 30 day period, nor exceed 400/100ml in more than 20 percent of the samples examined during such period. Violations of the fecal coliform standard are expected during rainfall events and, in some cases, this violation is expected to be caused by uncontrollable nonpoint source pollution. All coliform concentrations are to be analyzed using the membrane filter technique unless high turbidity or other adverse conditions necessitate the tube dilution method; in case of controversy over results, the MPN 5-tube dilution technique shall be used as the reference method;

(f) Oils, deleterious substances, colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation or to aquatic life and wildlife or adversely affect the palatability of fish, aesthetic quality or impair the waters for any designated uses. For the purpose of implementing this Rule, oils, deleterious substances, colored or other wastes shall include but not be limited to substances that cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines pursuant to [40 CFR 110.3\(a\)-\(b\)](#) which are hereby incorporated by reference including any subsequent amendments and additions. This material is available for inspection at the Department of Environment and Natural Resources, Division of Water Quality, 512 North Salisbury Street, Raleigh, North Carolina. Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325 at a cost of forty-five dollars (\$45.00);

(g) pH: shall be normal for the waters in the area, which generally shall range between 6.0 and 9.0 except that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;

- (h) Phenolic compounds: only such levels as shall not result in fish-flesh tainting or impairment of other best usage;
- (i) Radioactive substances:
 - (i) Combined radium-226 and radium-228: the maximum average annual activity level (based on at least four samples collected quarterly) for combined radium-226 and radium-228 shall not exceed five picoCuries per liter;
 - (ii) Alpha Emitters: the average annual gross alpha particle activity (including radium-226, but excluding radon and uranium) shall not exceed 15 picoCuries per liter;
 - (iii) Beta Emitters: the maximum average annual activity level (based on at least four samples, collected quarterly) for strontium-90 shall not exceed eight picoCuries per liter; nor shall the average annual gross beta particle activity (excluding potassium-40 and other naturally occurring radio-nuclides) exceed 50 picoCuries per liter; nor shall the maximum average annual activity level for tritium exceed 20,000 picoCuries per liter;
- (j) Temperature: not to exceed 2.8 degrees C (5.04 degrees F) above the natural water temperature, and in no case to exceed 29 degrees C (84.2 degrees F) for mountain and upper piedmont waters and 32 degrees C (89.6 degrees F) for lower piedmont and coastal plain Waters; the temperature for trout waters shall not be increased by more than 0.5 degrees C (0.9 degrees F) due to the discharge of heated liquids, but in no case to exceed 20 degrees C (68 degrees F);
- (k) Turbidity: the turbidity in the receiving water shall not exceed 50 Nephelometric Turbidity Units (NTU) in streams not designated as trout waters and 10 NTU in streams, lakes or reservoirs designated as trout waters; for lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTU; if turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased. Compliance with this turbidity standard can be met when land management activities employ Best Management Practices (BMPs) [as defined by Rule .0202 of this Section] recommended by the Designated Nonpoint Source Agency [as defined by Rule .0202 of this Section]. BMPs must be in full compliance with all specifications governing the proper design, installation, operation and maintenance of such BMPs;
- (l) Toxic substances: numerical water quality standards (maximum permissible levels) for the protection of human health applicable to all fresh surface waters are in Rule .0208 of this Section. Numerical water quality standards (maximum permissible levels) to protect aquatic life applicable to all fresh surface waters:
 - (i) Arsenic: 50 ug/l;
 - (ii) Beryllium: 6.5 ug/l;
 - (iii) Cadmium: 0.4 ug/l for trout waters and 2.0 ug/l for non-trout waters; attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823- B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators;
 - (iv) Chlorine, total residual: 17 ug/l;
 - (v) Chromium, total recoverable: 50 ug/l;
 - (vi) Cyanide, 5.0 ug/l, unless site-specific criteria are developed based upon the aquatic life at the site utilizing The Recalculation Procedure in Appendix B of Appendix L in the Environmental Protection Agency's Water Quality Standards Handbook hereby incorporated by reference including any subsequent amendments;
 - (vii) Fluorides: 1.8 mg/l;
 - (viii) Lead, total recoverable: 25 ug/l, collection of data on sources, transport and fate of lead shall be required as part of the toxicity reduction evaluation for dischargers who are out of compliance with whole effluent toxicity testing requirements and the concentration of lead in the effluent is concomitantly determined to exceed an instream level of 3.1 ug/l from the discharge;
 - (ix) Mercury: 0.012 ug/l;
 - (x) Nickel: 88 ug/l, attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or

translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94- 005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators;

(xi) Pesticides:

- (A) Aldrin: 0.002 ug/l;
- (B) Chlordane: 0.004 ug/l;
- (C) DDT: 0.001 ug/l;
- (D) Demeton: 0.1 ug/l;
- (E) Dieldrin: 0.002 ug/l;
- (F) Endosulfan: 0.05 ug/l;
- (G) Endrin: 0.002 ug/l;
- (H) Guthion: 0.01 ug/l;
- (I) Heptachlor: 0.004 ug/l;
- (J) Lindane: 0.01 ug/l;
- (K) Methoxychlor: 0.03 ug/l;
- (L) Mirex: 0.001 ug/l;
- (M) Parathion: 0.013 ug/l;
- (N) Toxaphene: 0.0002 ug/l;

(xii) Polychlorinated biphenyls: (total of all PCBs and congeners identified) 0.001 ug/l;

(xiii) Selenium: 5 ug/l;

(xiv) Toluene: 11 ug/l or 0.36 ug/l in trout waters;

(xv) Trialkyltin compounds: 0.07 ug/l expressed as tributyltin;

(4) Action Levels for Toxic Substances:

- (a) Copper: 7 ug/l;
- (b) Iron: 1.0 mg/l;
- (c) Silver: 0.06 ug/l;
- (d) Zinc: 50 ug/l;
- (e) Chloride: 230 mg/l;

If the Action Levels for any of the substances listed in this Subparagraph (which are generally not bioaccumulative and have variable toxicity to aquatic life because of chemical form, solubility, stream characteristics or associated waste characteristics) are determined by the waste load allocation to be exceeded in a receiving water by a discharge under the specified low flow criterion for toxic substances (Rule .0206 in this Section), the discharger shall monitor the chemical or biological effects of the discharge; efforts shall be made by all dischargers to reduce or eliminate these substances from their effluents. Those substances for which Action Levels are listed in this Subparagraph shall be limited as appropriate in the NPDES permit based on the Action Levels listed in this Subparagraph if sufficient information (to be determined for metals by measurements of that portion of the dissolved instream concentration of the Action Level parameter attributable to a specific NPDES permitted discharge) exists to indicate that any of those substances may be a causative factor resulting in toxicity of the effluent. NPDES permit limits may be based on translation of the toxic form to total recoverable metals. Studies used to determine the toxic form or translators must be designed according to "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.

For purposes other than consideration of NPDES permitting of point source discharges as described in this Subparagraph, the Action Levels in this Rule, as measured by an appropriate analytical technique, per 15A NCAC 02B . 0103(a), shall be considered as numerical ambient water quality standards.

Appendix 13-9

Tidal Salt Water Quality Standards for Class SC Waters

(Source: 15A NCAC 2B.0220) [Revised March 2004; Revised March 2008].

General. The water quality standards for all tidal salt waters are the basic standards applicable to Class SC waters. Additional and more stringent standards applicable to other specific tidal salt water classifications are specified in Rules .0221 and .0222 of this Section.

- Best Usage of Waters.: any usage except primary recreation or shellfishing for market purposes; usages include aquatic life propagation and maintenance of biological integrity (including fishing, fish and functioning PNAs), wildlife, and secondary recreation
- Conditions Related to Best Usage. The waters shall be suitable for aquatic life propagation and maintenance of biological integrity, wildlife, and secondary recreation; Any source of water pollution which precludes any of these uses, including their functioning as PNAs, on either a short-term or a long-term basis shall be considered to be violating a water quality standard.
- Quality standards applicable to all tidal salt waters:
 - (a) Chlorophyll a (corrected): not greater than 40 ug/l in sounds, estuaries, and other waters subject to growths of macroscopic or microscopic vegetation; the Commission or its designee may prohibit or limit any discharge of waste into surface waters if, in the opinion of the Director, the surface waters experience or the discharge would result in growths of microscopic or macroscopic vegetation such that the standards established pursuant to this Rule would be violated or the intended best usage of the waters would be impaired;
 - (b) Dissolved oxygen: not less than 5.0 mg/l, except that swamp waters, poorly flushed tidally influenced streams or embayments, or estuarine bottom waters may have lower values if caused by natural conditions;
 - (c) Floating solids; settleable solids; sludge deposits: only such amounts attributable to sewage, industrial wastes or other wastes, as shall not make the waters unsafe or unsuitable for aquatic life and wildlife, or impair the waters for any designated uses;
 - (d) Gases, total dissolved: not greater than 110 percent of saturation;
 - (e) Enterococcus, including Enterococcus faecalis, Enterococcus faecium, Enterococcus avium and Enterococcus gallinarum: not to exceed a geometric mean of 35 enterococci per 100 ml based upon a minimum of five samples within any consecutive 30 days. In accordance with 33 U.S.C. 1313 (Federal Water Pollution Control Act) for purposes of beach monitoring and notification, "Coastal Recreational Waters Monitoring, Evaluation and Notification " regulations (15A NCAC 18A .3400) are hereby incorporated by reference including any subsequent amendments
 - (f) Oils; deleterious substances; colored or other wastes: only such amounts as shall not render the waters injurious to public health, secondary recreation or to aquatic life and wildlife or adversely affect the palatability of fish, aesthetic quality or impair the waters for any designated uses; for the purpose of implementing this Rule, oils, deleterious substances, colored or other wastes shall include but not be limited to substances that cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines pursuant to 40 CFR 110.3
 - (g) pH: shall be normal for the waters in the area, which generally shall range between 6.8 and 8.5 except that swamp waters may have a pH as low as 4.3 if it is the result of natural conditions;
 - (h) Phenolic compounds: only such levels as shall not result in fish-flesh tainting or impairment of other best usage;
 - (i) Radioactive substances:
 - (i) Combined radium-226 and radium-228: The maximum average annual activity level (based on at least four samples, collected quarterly) for combined radium-226, and radium-228 shall not exceed five picoCuries per liter;
 - (ii) Alpha Emitters. The average annual gross alpha particle activity (including radium-226, but excluding radon and uranium) shall not exceed 15 picoCuries per liter;

- (iii) Beta Emitters. The maximum average annual activity level (based on at least four samples, collected quarterly) for strontium-90 shall not exceed eight picoCuries per liter; nor shall the average annual gross beta particle activity (excluding potassium-40 and other naturally occurring radio-nuclides) exceed 50 picoCuries per liter; nor shall the maximum average annual activity level for tritium exceed 20,000 picoCuries per liter;
- (j) Salinity: changes in salinity due to hydrological modifications shall not result in removal of the functions of a PNA; projects that are determined by the Director to result in modifications of salinity such that functions of a PNA are impaired will be required to employ water management practices to mitigate salinity impacts;
- (k) Temperature: shall not be increased above the natural water temperature by more than 0.8 degrees C (1.44 degrees F) during the months of June, July, and August nor more than 2.2 degrees C (3.96 degrees F) during other months and in no cases to exceed 32 degrees C (89.6 degrees F) due to the discharge of heated liquids;
- (l) Turbidity: the turbidity in the receiving water shall not exceed 25 NTU; if turbidity exceeds this level due to natural background conditions, the existing turbidity level shall not be increased. Compliance with this turbidity standard can be met when land management activities employ Best Management Practices (BMPs) [as defined by Rule .0202(6) of this Section] recommended by the Designated Nonpoint Source Agency (as defined by Rule .0202 of this Section). BMPs must be in full compliance with all specifications governing the proper design, installation, operation and maintenance of such BMPs;
- (m) Toxic substances: numerical water quality standards (maximum permissible levels) to protect aquatic life applicable to all tidal saltwaters:
 - (i) Arsenic, total recoverable: 50 ug/l;
 - (ii) Cadmium: 5.0 ug/l; attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.
 - (iii) Chromium, total: 20 ug/l;
 - (iv) Cyanide: 1.0 ug/l;
 - (v) Mercury: 0.025 ug/l;
 - (vi) Lead, total recoverable: 25 ug/l; collection of data on sources, transport and fate of lead shall be required as part of the toxicity reduction evaluation for dischargers that are out of compliance with whole effluent toxicity testing requirements and the concentration of lead in the effluent is concomitantly determined to exceed an instream level of 3.1 ug/l from the discharge;
 - (vii) Nickel: 8.3 ug/l; attainment of these water quality standards in surface waters shall be based on measurement of total recoverable metals concentrations unless appropriate studies have been conducted to translate total recoverable metals to a toxic form. Studies used to determine the toxic form or translators must be designed according to the "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion" published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.
 - (viii) Pesticides:
 - (A) Aldrin: 0.003 ug/l;
 - (B) Chlordane: 0.004 ug/l;
 - (C) DDT: 0.001 ug/l;
 - (D) Demeton: 0.1 ug/l;
 - (E) Dieldrin: 0.002 ug/l;
 - (F) Endosulfan: 0.009 ug/l;

- (G) Endrin: 0.002 ug/l;
- (H) Guthion: 0.01 ug/l;
- (I) Heptachlor: 0.004 ug/l;
- (J) Lindane: 0.004 ug/l;
- (K) Methoxychlor: 0.03 ug/l;
- (L) Mirex: 0.001 ug/l;
- (M) Parathion: 0.178 ug/l;
- (N) Toxaphene: 0.0002 ug/l.
- (ix) Polychlorinated biphenyls (total of all PCBs and congeners identified): 0.001 ug/l;
- (x) Selenium: 71 ug/l;
- (xi) Trialkyltin compounds: 0.002 ug/l expressed as tributyltin.

(4) Action Levels for Toxic Substances:

- (a) Copper: 3 ug/l;
- (b) Silver: 0.1 ug/l;
- (c) Zinc: 86 ug/l.

If the Action Levels for any of the substances listed in this Subparagraph (which are generally not bioaccumulative and have variable toxicity to aquatic life because of chemical form, solubility, stream characteristics or associated waste characteristics) are determined by the waste load allocation to be exceeded in a receiving water by a discharge under the specified low flow criterion for toxic substances (Rule .0206 in this Section), the discharger shall be required to monitor the chemical or biological effects of the discharge; efforts shall be made by all dischargers to reduce or eliminate these substances from their effluents. Those substances for which Action Levels are listed in this Subparagraph may be limited as appropriate in the NPDES permit if sufficient information (to be determined for metals by measurements of that portion of the dissolved instream concentration of the Action Level parameter attributable to a specific NPDES permitted discharge) exists to indicate that any of those substances may be a causative factor resulting in toxicity of the effluent. NPDES permit limits may be based on translation of the toxic form to total recoverable metals. Studies used to determine the toxic form or translators must be designed according to: "Water Quality Standards Handbook Second Edition" published by the Environmental Protection Agency (EPA 823-B-94-005a) or "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion " published by the Environmental Protection Agency (EPA 823-B-96-007) which are hereby incorporated by reference including any subsequent amendments. The Director shall consider conformance to EPA guidance as well as the presence of environmental conditions that limit the applicability of translators in approving the use of metal translators.

Appendix 13-10

Tidal Salt Water Quality Standards for Class SA Waters

(Source: 15A NCAC 2B.0221) [Revised March 2004; Revised March 2008].

The following water quality standards apply to surface waters that are used for shellfishing for market purposes and are classified SA. Water quality standards applicable to Class SC and SB waters as described in Rule .0220 and Rule 0.0222 of this Section also apply to Class SA waters.

- Best Usage of Waters. Shellfishing for market purposes and any other usage specified by the "SB" or "SC" classification;
- Conditions Related to Best Usage. Waters shall meet the current sanitary and bacteriological standards as adopted by the Commission for Health Services and shall be suitable for shellfish culture. Any source of water pollution which precludes any of these uses, including their functioning as PNAs, on either a short-term or a long-term basis shall be considered to be violating a water quality standard;
- Quality Standards applicable to Class SA Waters:
 1. Floating solids; settleable solids; sludge deposits: none attributable to sewage, industrial wastes or other wastes.
 2. Sewage: none.
 3. Industrial wastes, or other wastes: none which are not effectively treated to the satisfaction of the Commission in accordance with the requirements of the Division of Environmental Health.
 4. Organisms of coliform group: fecal coliform group not to exceed a median MF of 14/100 mL and not more than 10 percent of the samples exceed an MF count of 43/100 mL in those areas most probably exposed to fecal contamination during the most unfavorable hydrographic and pollution conditions.

Appendix 13-11

Tidal Salt Water Quality Standards for Class SB Waters

(Source: 15A NCAC 2B.0222) [Revised March 2004; Revised March 2008].

The following water quality standards apply to surface waters that are used for primary recreation, including frequent or organized swimming, and are classified SB. Water quality standards applicable to Class SC waters are described in Rule .0220 of this Section also apply to SB waters.

- **Best Usage of Waters.** Primary recreation and any other usage specified by the "SC" classification;
- **Conditions Related to Best Usage.** The waters shall meet accepted sanitary standards of water quality for outdoor bathing places as specified in Item (3) of this Rule and will be of sufficient size and depth for primary recreation purposes; any source of water pollution which precludes any of these uses, including their functioning as PNAs, on either a short-term or a long-term basis shall be considered to be violating a water quality standard;
- **Quality Standards applicable to Class SB waters:**
 1. Floating solids; settleable solids; sludge deposits: none attributable to sewage, industrial wastes or other wastes.
 2. Sewage; industrial wastes; or other wastes: none which are not effectively treated to the satisfaction of the Commission; in determining the degree of treatment required for such waters discharged into waters which are to be used for bathing, the Commission will take into consideration quantity and quality of the sewage and other wastes involved and the proximity of such discharges to the waters in this class; discharges in the immediate vicinity of bathing areas may not be allowed if the Director determines that the waste cannot be treated to ensure the protection of primary recreation.
 3. Enterococcus, including *Enterococcus faecalis*, *Enterococcus faecium*, *Enterococcus avium* and *Enterococcus gallinarum*: not to exceed a geometric mean of 35 enterococci per 100 ml based upon a minimum of five samples within any consecutive 30 days. In accordance with 33 U.S.C. 1313 (Federal Water Pollution Control Act) for purposes of beach monitoring and notification, "Coastal Recreation Waters Monitoring, Evaluation and Notification " regulations (15A NCAC 18A .3400) are hereby incorporated by reference including any subsequent amendments.

Appendix 13-12

Water Quality Standards Applicable to Class WS-I Waters, Class WS-II Waters, Class WS-III Waters, Class WS-IV Waters, and Class WS-V Waters

(Source: 15A NCAC 2B.0212, .0214, .0215, .0216, and .0218) [Revised March 2004; Revised March 2008]

Class WS-I Waters

The water quality standards apply to surface waters within water supply watersheds that are classified WS-I. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-I waters.

The best usage of WS-I waters are as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users desiring maximum protection of their water supplies, waters located on land in public ownership, and any best usage specified for Class C waters.

Class WS-II Waters

The water quality standards apply to surface waters within water supply watersheds that are classified WS-II. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-II waters.

The best usage of WS-II waters are as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users desiring maximum protection for their water supplies where a WS-I classification is not feasible and any best usage specified for Class C waters.

Class WS-III Waters

The water quality standards apply to surface water supply waters that are classified WS-III. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-III waters.

The best usage of WS-III waters are as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users where a more protective WS-I or WS-II classification is not feasible and any other best usage specified for Class C waters.

Class WS-IV Waters

The water quality standards apply to surface water supply waters that are classified WS-IV. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-IV waters.

The best usage of WS-IV waters are as follows: a source of water supply for drinking, culinary, or food-processing purposes for those users where a more protective WS-I, WS-II or WS-III classification is not feasible and any other best usage specified for Class C waters.

Class WS-V Waters

The water quality standards apply to surface water supply waters that are classified WS-V. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class WS-V waters.

The best usage of WS-V waters are as follows: waters that are protected as water supplies which are generally upstream and draining to Class WS-IV waters or waters previously used for drinking water supply purposes or waters used by industry to supply their employees, but not municipalities or counties, with a raw drinking water

supply source, although this type of use is not restricted to WS-V classification, all Class C uses. The Commission may consider a more protective classification for the water supply if a resolution requesting a more protective classification is submitted from all local governments having land use jurisdiction within the affected watershed.

Quality Standards applicable to Class WS-I Waters, Class WS-II Waters, Class WS-III Waters, Class WS-IV Waters, and Class WS-V Waters

1. Sewage, industrial wastes, nonprocess industrial wastes, or other wastes: none except for discharges which qualify for a General Permit and trout farm discharges; and none which has an adverse effect on human health or which are not effectively treated to the satisfaction of the Commission and in accordance with the requirements of the Division of Environmental Health, NC Department of Environment, Health, and Natural Resources.
2. Nonpoint source and stormwater pollution: none that would adversely impact the waters for use as a water supply or any other designated use (see regulation for retails for Low and High Density Options)
3. MBAS (Methylene-Blue Active Substances): not greater than 0.5 mg/l to protect the aesthetic qualities of water supplies and to prevent foaming
4. Odor producing substances contained in sewage or other wastes: only such amounts, whether alone or in combination with other substances or wastes, as will not cause: taste and odor difficulties in water supplies which cannot be corrected by treatment, impair the palatability of fish, or have a deleterious effect upon any best usage established for waters of this class.
5. Organisms of coliform group: total coliforms not to exceed 50/100 ml (MF count) as a monthly geometric mean value in watersheds serving as unfiltered water supplies;
6. chlorinated phenolic compounds: not greater than 1.0 micrograms/L (phenols) to protect water supplies from taste and odor problems from chlorinated phenols.
7. Total hardness: not greater than 100 mg/L as calcium carbonate.
8. Total dissolved solids: not greater than 500 mg/L.
9. Toxic and other deleterious substances:
 - a. water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for noncarcinogens in Class WS-II waters:
 - i. Barium: 1.0 mg/L
 - ii. Chloride: 250 mg/L
 - iii. Manganese: 200 micrograms/L
 - iv. Nickel: 25 micrograms/L
 - v. Nitrate nitrogen: 10 mg/L
 - vi. 2,4-D: 100 micrograms/L
 - vii. 2,4,5-TP: 10 micrograms/L
 - viii. Sulfates: 250 mg/L
 - b. Water quality standards (maximum permissible concentrations) to protect human health through water consumption and fish tissue consumption for carcinogens:
 - (A) Aldrin: 0.05 ng/l;
 - (B) Arsenic: 10 ug/l;
 - (C) Benzene: 1.19 ug/l;
 - (D) Carbon tetrachloride: 0.254 ug/l;
 - (E) Chlordane: 0.8 ng/l;
 - (F) Chlorinated benzenes: 488 ug/l;
 - (G) DDT: 0.2 ng/l;
 - (H) Dieldrin: 0.05 ng/l;
 - (I) Dioxin: 0.000005 ng/l;
 - (J) Heptachlor: 0.08 ng/l;
 - (K) Hexachlorobutadiene: 0.44 ug/l;
 - (L) Polynuclear aromatic hydrocarbons (total of all PAHs): 2.8 ng/l;
 - (M) Tetrachloroethane (1,1,2,2): 0.17 ug/l;
 - (N) Tetrachloroethylene: 0.7 ug/l;
 - (O) Trichloroethylene: 2.5 ug/l;
 - (P) Vinyl Chloride: 0.025 ug/l.

Appendix 13-13

Fresh Surface Water Quality Standards for Class B Waters

(Source: 15A NCAC 2B.0219) [Revised March 2004; Citation Revised March 2007].

- The following water quality standards apply to surface waters that are for primary recreation, including frequent or organized swimming and are classified as Class B waters. Water quality standards applicable to Class C waters as described in Rule .0211 of this Section also apply to Class B waters.
- Best Usage of Waters. Primary recreation and any other best usage specified by the "C" classification;
- Conditions Related to Best Usage. The waters shall meet accepted standards of water quality for outdoor bathing places as specified in Item (3) of this Rule and shall be of sufficient size and depth for primary recreation purposes. Sources of water pollution which preclude any of these uses on either a short-term or long-term basis shall be considered to be violating a water quality standard;
- Quality standards applicable to Class B waters:
 - (a) Sewage, industrial wastes, or other wastes: none which are not effectively treated to the satisfaction of the Commission; in determining the degree of treatment required for such waste when discharged into waters to be used for bathing, the Commission shall consider the quality and quantity of the sewage and wastes involved and the proximity of such discharges to waters in this class; discharges in the immediate vicinity of bathing areas may not be allowed if the Director determines that the waste can not be reliably treated to ensure the protection of primary recreation;
 - (b) Organisms of coliform group: fecal coliforms not to exceed geometric mean of 200/100 ml (MF count) based on at least five consecutive samples examined during any 30-day period and not to exceed 400/100 ml in more than 20 percent of the samples examined during such period.

Appendix 13-14

Water Quality Standards Applicable to Class WS-V Waters

(Source: 15A NCAC 2B.0218) [Deleted March 2004].

Appendix 13-15

Water Quality Standards for Groundwater

[Deleted March 2004]

(NOTE: 15A NCAC 2L.0202, expired effective February 9, 2003.)

Appendix 13-16

Groundwater Classifications

(Source: 15A NCAC 2L.0201) [Citation Revised March 2007]

- Class GA groundwaters; usage and occurrence:
 1. Best Usage. Existing or potential source of drinking water supply for humans.
 2. Conditions Related to Best Usage. This class is intended for those groundwaters in which chloride concentrations are equal to or less than 250 mg/L, and which are considered suitable for drinking in their natural state, but which may require treatment to improve quality related to natural conditions.
 3. Occurrence. In the saturated zone.
- Class GSA groundwaters; usage and occurrence:
 1. Best Usage. Existing or potential source of water supply for potable mineral water and conversion to fresh waters.
 2. Conditions Related to Best Usage. This class is intended for those groundwaters in which the chloride concentrations due to natural conditions is in excess of 250 mg/L, but which otherwise may be considered suitable for use as potable water after treatment to reduce concentrations of naturally occurring substances.
 3. Occurrence. In the saturated zone.
- Class GC groundwaters: usage and occurrence:
 1. Best Usage. The best usage of GC groundwaters is as a source of water supply for purposes other than drinking, including other domestic uses by humans.
 2. Conditions Related to Best Usage. This class includes those groundwaters that do not meet the quality criteria for GA or GSA groundwaters and for which efforts to improve groundwater quality would not be technologically feasible, or not in the best interest of the public. Continued consumption of waters of this class by humans could result in adverse health affects.
 3. Occurrence. Groundwaters of this class may be defined by the Commission pursuant to Section .0300 of this Subchapter on a case-by-case basis.

Appendix 13-17

Default Water Use Reduction Measures During Extreme and Exceptional Drought Designations

(Source: 15A NCAC 2E.0613 and 2E.0614) [Added March 2008]

When the NCDMAC designates a region of the state as suffering from Extreme Drought, the following water use reduction standards shall apply to water users in the designated area:

- (1) Water users shall reduce water use by at least 10 percent below the amount used in the month prior to a NCDMAC Extreme Drought designation in the affected area.
- (2) All water users shall minimize non-essential use of water.
- (3) Outdoor irrigation is prohibited, except for:
 - (a) Watering lawns less than one inch of water per week, between the hours of 8:00 PM and 8:00 AM;
 - (b) Maintaining newly installed landscapes, lawns and erosion control projects that were initiated prior to the issuance of an Extreme Drought advisory, not to exceed the minimum rate necessary on the day of installation and for 60 days following installation, by means designed and operated to maximize water use efficiency and to prevent run-off and excessive watering;
 - (c) Using spray irrigation by wastewater effluent treatment systems from the NCDMAC Extreme Drought designated area(s) according to permit conditions under the provisions of North Carolina Administrative Code 15A NCAC 02H .0200 and any successive rules and amendments, as administered by the Department's Division of Water Quality;
 - (d) Maintaining athletic fields with less than one inch of water per week between the hours of 8:00 PM and 8:00 AM;
 - (e) Maintaining personal food gardens;
 - (f) Maintaining existing landscape plantings at the minimum rate necessary, between the hours of 8:00 PM and 8:00 AM, using a hand held container or hose with an automatic shutoff or using drip irrigation;
 - (g) Watering golf course tees, fairways and greens by means of an automated irrigation system between the hours of 8:00 PM and 8:00 AM with less than one inch of water per week;
 - (h) Syringing golf course tees and greens exhibiting visible signs of stress between the hours of 12:00 PM and 4:00 PM, at the minimum rate necessary; and
 - (i) Maintaining plant inventories, by means designed and operated to maximize water use efficiency, at retail garden centers, garden centers within mass merchant stores or other businesses with live plants as their stock in trade.
- (4) The use of water for washing or cleaning of mobile equipment including automobiles, trucks, boats and fleet vehicles is prohibited, except for:
 - (a) Operating commercial car washes that utilize the industry's best management practices for the efficient use of water and those that recycle, reclaim or reuse a portion of their wash water in their daily operations and have reduced total water consumption by 10 percent below the amount used in the month prior to a NCDMAC Extreme Drought designation in the affected area;
 - (b) Washing with a hand-held hose with an automatic shutoff device using less than five gallons per vehicle;
 - (c) Cleaning new and used vehicles using less than five gallons per vehicle to prepare for display in a dealer's show room, upon receipt from the manufacturer or prior owner, and following a sale prior to delivery to the purchaser; and
 - (d) Cleaning of construction, emergency, transport or public transportation vehicles if necessary to preserve the proper functioning and safe operation of the vehicle.
- (5) The use of water for washing impervious and paved surfaces is prohibited, except for:
 - (a) Prewashing in preparation for painting, recoating or sealing; and
 - (b) Applying at the minimum rate necessary for sanitation and public health purposes.

- (6) The use of water for ornamental fountains, artificial waterfalls, misting machines, reflecting pools, and ornamental ponds is prohibited, except for the minimum amount of make-up water necessary to maintain aquatic life.
- (7) The use of water for power washing of buildings and other structures is prohibited except when necessary to meet federal, state and local public health and safety requirements.
- (8) The use of water for flushing sewer lines is prohibited except when necessary to meet public health and safety standards.
- (9) The use of water from fire hydrants is prohibited, except for:
 - (a) Fighting fire and fire protection purposes;
 - (b) Testing or training if it is necessary to protect public safety and has been approved by the applicable water purveyor; and
 - (c) Flushing of potable water lines to protect the public health.
- (10) The filling of family, public or private swimming pools, including hot tubs, spas and whirlpool tubs, is prohibited, except:
 - (a) For health and rehabilitative purposes as prescribed by a medical doctor or administered by a medical facility; and
 - (b) For the minimal amount of make-up water necessary to maintain a pool's structural integrity and filtration system.
- (11) The serving of water in eating and drinking establishments shall be done on customer request only.
- (12) Water shall be applied at the minimum rate necessary to maintain effective dust and erosion control during the construction of roads and highways initiated prior to the declaration of an Extreme Drought by the NCDMAC.

When the NCDMAC designates a region of the state as suffering from Exceptional Drought, the following water use reduction standards shall apply to water users in the designated area:

- (1) Water users shall reduce water use by at least 20 percent below the amount used in the month prior to the most recent NCDMAC Extreme Drought designation in the affected area.
- (2) Non-essential water use shall be minimized by the maximum extent possible.
- (3) Outdoor irrigation is prohibited, except for:
 - (a) Using spray irrigation by wastewater effluent treatment systems in NCDMAC Exceptional Drought designated areas according to permit conditions under the provisions of North Carolina Administrative Code 15A NCAC 02H .0200 and any successive rules and amendments, as administered by the Department's Division of Water Quality;
 - (b) Watering personal food gardens by hand with a container or hand held hose with an automatic shutoff device or using drip irrigation between the hours of 8:00 PM and 8:00 AM;
 - (c) Maintaining existing landscape plantings at the minimum rate necessary, between the hours of 8:00 PM and 8:00 AM, using a hand held container or hose with an automatic shutoff or using drip irrigation;
 - (d) Watering golf course tees, fairways and greens, athletic fields and lawns between the hours of 8:00 PM and 8:00 AM with less than one half inch of water per week;
 - (e) Syringing of golf course tees and greens exhibiting visible signs of stress between the hours of 1:00 PM and 4:00 PM, at the minimum rate necessary;
 - (f) Maintaining newly installed landscapes, lawns and erosion control projects that were initiated prior to the issuance of an Extreme Drought advisory, not to exceed the minimum rate necessary on the day of installation and for 28 days following installation, by means designed and operated to maximize water use efficiency and to prevent run-off and excessive watering; and

- (g) Maintaining plant inventories, by means designed and operated to maximize water use efficiency, at retail garden centers, garden centers within mass merchant stores, or other businesses with live plants as their stock in trade.
- (4) The use of water for washing or cleaning mobile equipment including automobiles, trucks, boats and fleet vehicles is prohibited, except for:
 - (a) Operating commercial car washes that utilize the industry's best management practices for the efficient use of water and those that recycle, reclaim or reuse a portion of their wash water and have reduced total water consumption by 20 percent below the amount used in the month prior to the most recent NCDMAC Extreme Drought designation in the affected area;
 - (b) Cleaning of new and used vehicles in preparation for display in a dealer's show room, using less than five gallons per vehicle; and
 - (c) Using the minimum amount of water necessary to clean construction, emergency, transport or public transportation vehicles, if required to preserve the proper functioning and safe operation of the vehicle as required by law.
- (5) The use of water for washing impervious and paved surfaces is prohibited except for using the minimum amount of water necessary for sanitation and public health purposes.
- (6) The use of water for power washing of buildings and other structures is prohibited.
- (7) The use of water for flushing sewer lines is prohibited except when necessary to meet public health and safety standards.
- (8) The use of water from fire hydrants is prohibited, except for:
 - (a) Fighting fire and fire protection purposes; and
 - (b) Flushing of drinking water lines to protect public health and safety.
- (9) The filling of family, public or private swimming pools, including hot tubs, spas and whirlpool tubs, is prohibited except for health and rehabilitative purposes as prescribed by a medical doctor or administered by a medical facility.
- (10) The use of water for ornamental fountains, artificial waterfalls, misting machines, reflecting pools, and ornamental ponds is prohibited, except for the minimum amount of make-up water necessary to maintain aquatic life.
- (11) The serving of water in eating and drinking establishments shall be done on customer request only.
- (12) Water shall be applied at the minimum rate necessary to maintain effective dust and erosion control during the construction of roads and highways initiated prior to the declaration of an Extreme Drought by the NCDMAC.

Appendix 13-18

Standard Frequency of Oversight Visits for Ground Water and Supplemental Treatment Facilities

(Source: 15A NCAC 18C.1303) [Added March 2010]

SYSTEM TYPE	POPULATION SIZE	STANDARD FREQUENCY OF OVERSIGHT VISITS
Community	> 10,000	Daily
	> 3,300 to 9,999	Five times per week
	501 to 3,300	Three times per week
	500 or fewer	Two times per week
Non-transient, non-community	> 1,000	Three times per week
	1,000 or fewer	Two times per week
Transient, non-community	Any population size	Once per week, unless an ORC is not required by 15A NCAC 18D.0206

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14. ABSTRACT Environmental assessments help determine compliance with current environmental regulations. The U.S. Air Force, U.S. Army, Defense Logistics Agency (DLA), and Corps of Engineers (Civil Works) have adopted environmental compliance programs that identify compliance problems before they are cited as violations by the U.S. Environmental Protection Agency. Since 1984, the U.S. Army Construction Engineering Research Laboratory, in cooperation with numerous Department of Defense (DOD) components, has developed environmental compliance assessment checklist manuals. The Environmental Assessment and Management (TEAM) Guide was developed for use by all DOD components. Currently there are five participating DOD components: the Air Force, Air National Guard, Army, Civil Works, and DLA. These agencies have agreed to share the development and maintenance of this Guide. The Guide combines Code of Federal Regulations and management practices into a series of checklists that show legal requirements and the specific operations or items to review. TEAM Guide is supplemented by DOD component-specific manuals detailing DOD component regulations and policies. The North Carolina Supplement was developed to be used in conjunction with the TEAM Guide, using existing North Carolina state environmental legislation and regulations as well as suggested management practices.					
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